DOCUMENT RESUME

ED 394 961 SP 036 671

| | |
|---|---|
| AUTHOR | de Bruin, A., Ed.; And Others |
| TITLE | Health Interview Surveys: Towards International Harmonization of Methods and Instruments. WHO Regional Publications, European Series, No. 58. |
| INSTITUTION | Statistics Netherlands, Voorburg.; World Health Organization, Copenhagen (Denmark). Regional Office for Europe. |
| REPORT NO | ISBN-92-890-1322-2; ISSN-0378-2255 |
| PUB DATE | 96 |
| NOTE | 172p. |
| AVAILABLE FROM | Office of Publications, WHO Regional Office for Europe, Scherfigsvej 8, DK-2100 Copenhagen 0, Denmark (39 Swiss francs). |
| PUB TYPE | Guides - General (050) -- Tests/Evaluation Instruments (160) |
| EDRS PRICE | MF01/PC07 Plus Postage. |
| DESCRIPTORS | *Data Collection; *Evaluation Methods; Foreign Countries; Health Education; *Health Needs; Health Promotion; Information Needs; *International Cooperation; *Interviews; Medical Care Evaluation; Research Needs; Surveys |
| IDENTIFIERS | *Health for All by the Year 2000; *World Health Organization European Region |

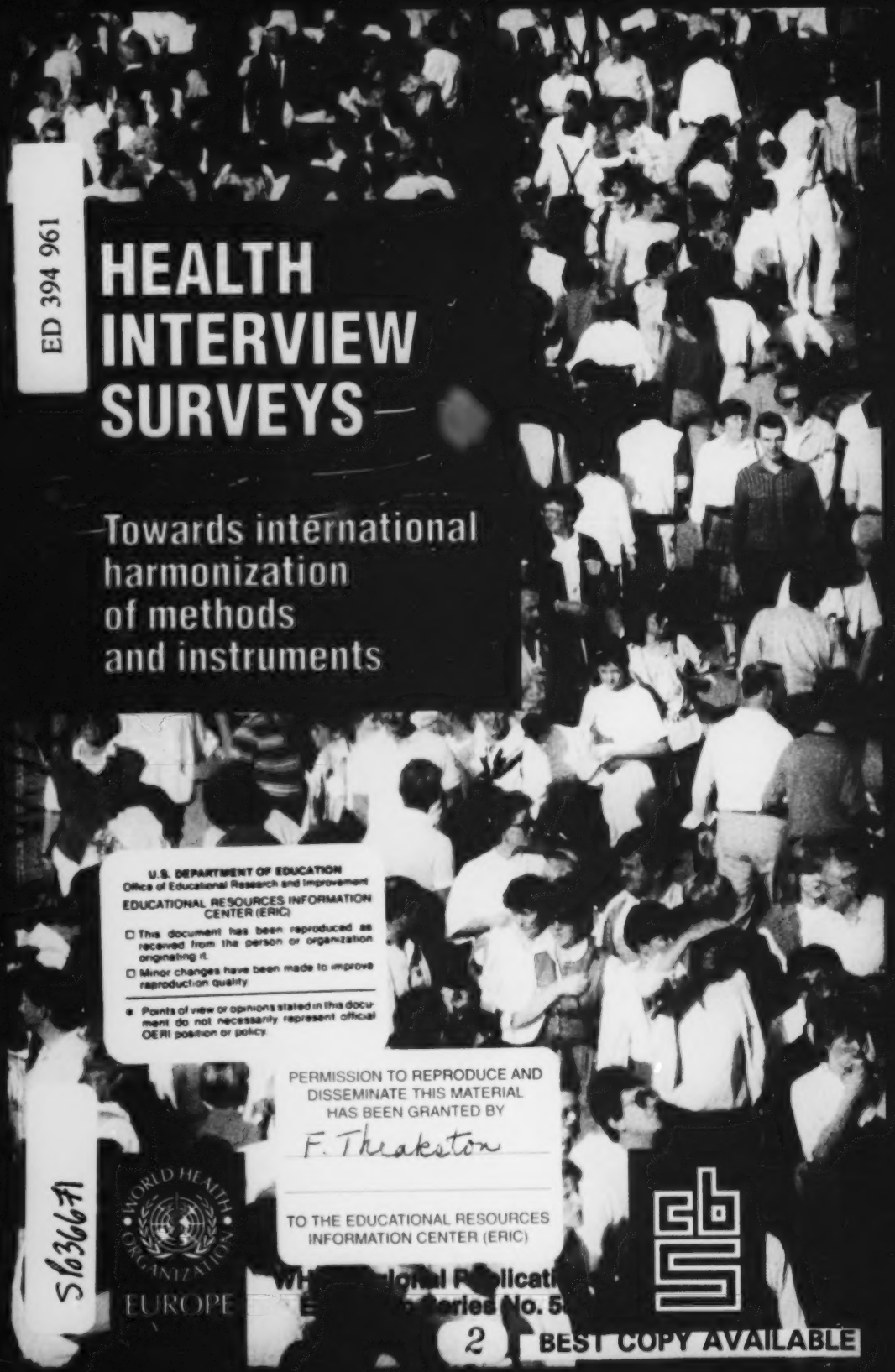
ABSTRACT

This book describes the background, discussions, proceedings, and prospects of three consultations held by the Statistics Netherlands office under the aegis of the World Health Organization Regional Office for Europe. The overall goal of the consultations is to facilitate the development of common methods and instruments for health interview surveys, especially the European Health for All targets and database. This guide provides specific and practice-oriented views of measurement in health, with emphasis on the international comparability of methods and instruments. Chapter 1 reviews the role of health interview surveys in monitoring and evaluation of the health for all strategy, ending with a selection of health for all indicators that are only or best measured by health interview surveys. Chapter 2 presents the background, aims, and main discussion topics of the consultations. In Chapter 3, the conclusions of the consultations with respect to methodological issues are presented. Chapter 4, the core of the book, provides a systematic and updated description of the recommended common instruments for measurement of health for all indicators in health interview surveys. Conclusions and future perspectives with respect to the implementation and evaluation of common instruments are presented in chapter 5. Appendixes (annexes) include a list of participants at the consultations, a list of working papers used for preparation of this document, recommended instruments for chronic mental conditions, examples of showcards for use in administering the instrument for socioeconomic classification, and an illustrative set of questions on alcohol consumption. (Contains 154 references.) (NAV)

ED 394 961

# HEALTH INTERVIEW SURVEYS

## Towards international harmonization of methods and instruments



U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

F. Thakston

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

S1636671

WORLD HEALTH ORGANIZATION
EUROPE

WH[illegible]olial Publicati[illegible]
E[illegible]Series No. 5[illegible]

2

BEST COPY AVAILABLE

The World Health Organization is a specialized agency of the United Nations with primary responsibility for international health matters and public health. Through this Organization, which was created in 1948, the health professions of over 180 countries exchange their knowledge and experience with the aim of making possible the attainment by all citizens of the world of a level of health that will permit them to lead a socially and economically productive life.

The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health problems of the countries it serves. The European Region embraces some 850 million people living in an area stretching from Greenland in the north and the Mediterranean in the south to the Pacific shores of Russia. The European programme of WHO therefore concentrates both on the problems associated with industrial and post-industrial society and on those faced by the emerging democracies of central and eastern Europe and the former Soviet Union. In its strategy for attaining the goal of health for all the Regional Office is arranging its activities in three main areas: lifestyles conducive to health, a healthy environment, and appropriate services for prevention, treatment and care.

The European Region is characterized by the large number of languages spoken by its peoples, and the resulting difficulties in disseminating information to all who may need it. Applications for rights of translation of Regional Office books are therefore most welcome.

# Health interview surveys

## Towards international harmonization of methods and instruments

WHO Library Cataloguing in Publication Data

Health interview surveys: towards international harmonization of methods and instruments / edited by A. de Bruin, H.S.J. Picavet and A. Nossikov

(WHO regional publications. European series ; No. 58)

1.Data collection 2.Health status indicators 3. Health surveys 4.Interviews - methods 5.Europe I.Bruin, A. II.Nossikov, A. III.Picavet, H.S.J. IV.Series

ISBN 92 890 1322 2 (NLM Classification: WA 950)
ISSN 0378-2255

*Text editing:* Sheila Poole Frank Theakston
*Cover design:* Sven Lund

World Health Organization
Regional Office for Europe
Copenhagen

Statistics Netherlands
Voorburg
Netherlands

# Health interview surveys

## Towards international harmonization of methods and instruments

*Edited by*

A. de Bruin
H.S.J. Picavet
*Statistics Netherlands*
*Voorburg, Netherlands*
&
A. Nossikov
*WHO Regional Office for Europe*
*Copenhagen, Denmark*

WHO Regional Publications, European Series, No. 58

€

ISBN 92 890 1322 2
ISSN 0378-2255

The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full. Applications and enquiries should be addressed to the Office of Publications, WHO Regional Office for Europe, Scherfigsvej 8, DK-2100 Copenhagen Ø, Denmark, which will be glad to provide the latest information on any changes made to the text, plans for new editions, and reprints and translations already available.

**© World Health Organization 1996**

Publications of the World Health Organization enjoy copyright protection in accordance with the provisions of Protocol 2 of the Universal Copyright Convention. All rights reserved.

The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the Secretariat of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The names of countries or areas used in this publication are those that obtained at the time the original language edition of the book was prepared.

The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters.

The views expressed in this publication are those of the contributors and do not necessarily represent the decisions or the stated policy of the World Health Organization or of Statistics Netherlands.

PRINTED IN FINLAND

CONTENTS


| | Page |
|---|---|
| *Foreword* | ix |
| Acknowledgements | xiii |
| Introduction | 1 |
| 1. Health for all strategy and the role of health interview surveys | 3 |
| The European health for all monitoring and evaluation framework | 4 |
| Health for all indicators – definition and purpose | 6 |
| Health for all indicators and health policy | 8 |
| Information sources | 9 |
| Existing statistical records | 9 |
| Ad hoc investigation or surveillance systems within the health services | 10 |
| Population surveys | 11 |
| Health for all indicators that are only or best measured by a health interview survey | 12 |
| 2. Developing common methods and instruments for health interview surveys | 15 |
| Coverage of health for all indicators in health interview surveys (1980–1990) | 16 |
| Health interview survey project | 21 |
| Consultations to develop common methods and instruments for health interview surveys | 21 |
| First Consultation, 1988 | 23 |
| Second Consultation, 1990 | 23 |
| Third Consultation, 1992 | 27 |
| Opportunities for improving the international comparability of health interview survey data | 28 |
| Project review | 29 |

3. Health interview survey methodology ..... 31
Data collection ..... 32
Construction of the questionnaire ..... 32
Memory ..... 34
Language ..... 34
Proxy informants ..... 35
Face-to-face interviews and self-completion ..... 36
Postal and telephone surveys ..... 37
Health interview and health examination surveys ..... 37
Interviewers ..... 38
Population – sample, size and structure ..... 38
Sample ..... 39
Unit for sampling and analysis ..... 40
Size ..... 40
Collection period ..... 41
Continuous or repeated surveys ..... 41
Institutionalized populations ..... 42
Children ..... 43
Non-response ..... 44
Data processing and presentation ..... 45
Concluding remarks ..... 47

4. Common instruments for health for all indicators ..... 49
Recommended instruments ..... 51
Perceived health ..... 51
Temporary disability ..... 53
Long-term disability (physical) ..... 55
Disability-free life expectancy ..... 60
Chronic conditions (mental) ..... 65
Smoking ..... 71
Physical activity ..... 75
Birth weight ..... 78
Breast-feeding ..... 80
Body mass index ..... 83
Socioeconomic classification ..... 87
Indicators for which recommended instruments are not yet available ..... 95
Chronic conditions (physical) ..... 95
Long-term disability (mental/social) ..... 98

Food consumption ..... 100
Alcohol consumption ..... 106

5. Harmonizing health interview surveys: conclusions and future prospects ..... 111

Implementation of common instruments in health interview surveys ..... 112
Promotion ..... 112
Evaluation ..... 113
Standard instruments and revisions ..... 115

Concluding remarks ..... 115

References ..... 119

Annex 1. List of participants in the Consultations to Develop Common Methods and Instruments for Health Interview Surveys ..... 133

Annex 2. List of working papers prepared for the Consultations to Develop Common Methods and Instruments for Health Interview Surveys that have been used in preparing this publication ..... 139

Annex 3. Recommended instruments for chronic mental conditions ..... 141

Annex 4. Examples of showcards for use in administering the instrument for socioeconomic classification ..... 153

Annex 5. Illustrative sets of questions on alcohol consumption ..... 157

# Foreword

*Adequate health information support is essential for implementing, monitoring and evaluating public health action to achieve health for all. Although many countries undertake the routine collection of a large variety of health data, most of them feel a need to improve their health information systems to make them more effective in supporting health development. Such improvement can have positive implications in at least two ways.*

*First, policy-makers and managers can rely on the information they receive to provide a better foundation for decisions on priorities for action and the most effective allocation of resources. This also means that they have better guidance in negotiating with other sectors for investment in health. Secondly, active participation of all people in health development implies that countries, communities and individuals can separately make up their mind on what line of action they will take with respect to their health situation. They can only do this if they are appropriately informed. It is therefore a basic tenet of the health for all philosophy that people should be given the knowledge and influence necessary to ensure their active participation in health development. Such knowledge requires adequate information, of which health statistics are a vital part.*

*Information in the health field is affected by various problems. Available data are often not used to their full potential owing to shortage of trained staff and administrative problems. Furthermore,*

*there are frequently deficiencies in the data produced, in respect of such factors as relevance, timeliness, reliability, coordination and cooperation in data collection and processing.*

*From the perspective of the health for all strategy, however, the quality of the data also depends on two other factors: international comparability and relevance for the measurement of equities in health. The latter presupposes that appropriate subgroups of the population in question are included in the measurement and analysis of health levels.*

*When examined against this background, existing data collection methods and instruments differ in their relative merit. It is not difficult to recognize the several advantages of health interview surveys. They are population-based and, therefore, represent all subgroups of the population, including the underprivileged and the non-users of health services, which is essential for monitoring health for all. They are also the only (or at least the most important) tool for assessing certain dimensions of health, such as perceived health, quality of life, patterns of personal behaviour and the implications of health problems for day-to-day functioning and well-being. In addition, through a combination of health variables and socioeconomic and demographic characteristics, survey data permit an integrated description of health status and its determinants. Other information from health interview surveys, e.g. data on consumption of health care, can complement the information from other sources and thereby potentially increase its usefulness.*

*Although many countries employ health interview surveys to provide information for a range of health indicators, international comparison of this type of data has posed problems owing to differences in the methods and instruments used. Limited international comparability also means limitations in the use of data at national level, since comparisons with other countries may be important for many health decisions.*

*The need to improve this situation has become more pressing with the adoption of the health for all strategy, and in particular the formulation of the specific health for all targets for the European Region of the World Health Organization (WHO). The need has been recognized by data producers, data users, different levels in national administrations, and the international organizations. More specifically,*

*this led Statistics Netherlands, under the aegis of the WHO Regional Office for Europe, to organize a series of international consultations with those involved in national health interview surveys. So far, three such consultations have been held "to develop common methods and instruments for health interview surveys", and attempts have been made to evaluate the recommendations, to assess their feasibility and to initiate a process of practical implementation. The outcomes of these activities are summarized in this book, which provides a solid foundation for future work in the area.*

*More recently, the importance of this project has greatly increased, as the underlying structure of national and international interrelations in the European Region has changed profoundly. All countries are searching for new or more effective forms of integration, although the obstacles to, speed of, and expected outcomes of this pursuit may differ.*

*The main challenge for the immediate future is the implementation of the agreed common instruments for health interview surveys. When more and more countries start using the instruments in their national surveys, the possibilities for comparative analysis will increase, in particular as related to the monitoring of health for all strategies. Accumulated experience with these instruments will facilitate the future development and improvement of measurement methods and instruments, and thus further the very basic goal of internationally comparable or standardized measurement of key health indicators.*

A.P.J. Abrahamse
*Director-General*
*Statistics Netherlands*

J.E. Asvall
*Regional Director*
*WHO Regional Office for Europe*

# Acknowledgements

Our gratitude goes to all participants in the Consultations to Develop Common Methods and Instruments for Health Interview Surveys (held in 1988, 1990 and 1992) listed in Annex 1, who provided the basic material for this publication.

Furthermore, we wish to acknowledge the valuable comments on the draft of this publication of the following: Mr J. van den Berg and Mr J.T.P. Bonte of Statistics Netherlands, Dr M.W. de Kleijn-de Vrankrijker of the TNO Institute of Preventive Health Care, Leiden, Netherlands, and Mr P. Anderson, Dr J.G. Sampaio Faria, Ms E. Helsing and Mr T. Piha of the WHO Regional Office for Europe, Copenhagen, Denmark.

We should also like to acknowledge the help and advice provided by Dr R.J. Butcher and Ms K. Dunnell (Office of Population Censuses and Surveys, London, United Kingdom), Dr T. Spuhler (Federal Statistical Office, Berne, Switzerland), Mr J.M. Robine (Institut national de la Santé et de la Recherche médicale, Montpellier, France), Dr E.M. Badley (Arthritis Community Research and Evaluation Unit, Toronto, Canada), Mr G. van de Willige and Dr D. Wiersma (University of Groningen, Groningen, Netherlands) and Dr H.P.A. van de Water (TNO Institute of Preventive Health Care, Leiden, Netherlands).

# Introduction

Since the adoption by the World Health Organization in 1977 of the strategy of health for all, countries have become more aware of the need for adequate information for policy formulation, implementation and monitoring. Target 35 of the health for all strategy of the European Region of WHO states that health information systems in all Member States should actively support the formulation, implementation, monitoring and evaluation of health for all policies. To achieve this target, health information systems should, *inter alia*, use appropriate indicators to measure progress towards health (for all) targets and provide for minimum data sets based on internationally agreed standards *(1)*. The adoption of the health for all targets and indicators by the European Region resulted in the establishment of a regular monitoring and evaluation process, which has helped countries to see their information needs more clearly. It appears that information in the health services is often geared only to the allocation of resources and the control of spending, not to the need to evaluate services and patient outcomes. Population-based data – on morbidity, disability, the use of services, lifestyles and positive health – have not received the attention their importance warrants. It was therefore considered necessary to explore further the role of population or health interview surveys in the health for all monitoring and evaluation process, and to develop standardized methods and instruments for such surveys.

To facilitate the development of common methods and instruments for health interview surveys, a series of international consultations has

been organized by Statistics Netherlands under the aegis of the WHO Regional Office for Europe *(2–4)*. The background, discussions, proceedings and prospects of the three consultations held so far are described in this book.

In 1979, the WHO Regional Office for Europe and the International Epidemiological Association issued a publication on the concepts and processes in the measurement of health *(5)* followed in 1987 by another on the measurement of improvements in health through programmes of disease control and health promotion *(6)*. These two publications provided an overall view of measurement in health and some examples of methods and their use. The focus of the present book is more specific and practice-oriented: it deals with the measurement of health for all indicators in health surveys, with emphasis on the international comparability of methods and instruments. By giving concise and structured information on survey methodology and recommended measurement instruments, the aim is to provide a reference source for all those involved in the planning and implementation of health information systems in general, and of health interview surveys in particular.

In Chapter 1 the role of health interview surveys in monitoring and evaluation of the health for all strategy is described, ending with a selection of health for all indicators that are only or best measured by health interview surveys. This list of indicators has formed the basis of discussion in the three consultations.

The background, aims and main discussion topics of the Consultations to Develop Common Methods and Instruments for Health Interview Surveys are highlighted in Chapter 2. In Chapter 3 the conclusions of the consultations with respect to methodological issues in health interview surveys are described. Chapter 4 forms the core of the book, giving a systematic and updated description of the recommended common instruments for measurement of health for all indicators in health interview surveys. It should be noted that the recommendations of the consultations are based on experiences in the European Region of WHO and in some industrialized countries outside the Region; their applicability in other regions and cultures has not been discussed.

The book ends with some conclusions and future perspectives with respect to the implementation and evaluation of common instruments (Chapter 5).

1

# Health for all Strategy and the Role of Health Interview Surveys

The Member States of WHO, in launching the worldwide movement for health for all in 1977, decided that the "main social target of governments and WHO in the coming decades should be the attainment by all citizens of the world by the year 2000 of a level of health that will permit them to lead a socially and economically productive life" (resolution WHA30.43). In starting this process, Member States recognized that it would require major efforts by all the countries of the world to keep the momentum going. At the International Conference on Primary Health Care, organized jointly by UNICEF and WHO in Alma-Ata, USSR in 1978, Member States agreed on the minimum content of primary health care, which was seen as the key to achieving health for all. In 1979 the World Health Assembly launched a global strategy for health for all by the year 2000 (resolution WHA32.30) and also agreed to adapt and expand the global strategy to meet the specific needs of regional and national circumstances.

At the thirtieth session of the Regional Committee, in Fez in September 1980, the Member States of the WHO European Region approved their first common health policy: the European strategy for attaining health for all *(7)*. This strategy calls for a fundamental change in national health policies; it urges that high priority be given to health promotion and disease prevention, that all sectors with an impact on health take positive steps to maintain and improve health, that greater stress be placed on the role that individuals, families and communities can play in health development, and that primary health care be the

major approach to bringing about these changes. It also calls for the formulation of specific regional targets to support the implementation of the strategy.

The Regional Committee accordingly adopted 38 specific regional targets at its thirty-fourth session in Copenhagen in September 1984. Also proposed were 65 essential regional indicators or groups of indicators, incorporating the 12 global indicators, to be used as a means of assessing progress towards attainment of the targets *(8)*. In 1991, the 38 regional health for all targets were updated and, together with a list of indicators, adopted by the Regional Committee at its forty-first session in Lisbon *(1)*.

The commitments made by each European Member State go beyond mere acceptance of a common health policy. To ensure that their pledges are followed by concrete action, Member States have undertaken to follow their own progress towards health for all by means of systematic and regular monitoring and evaluation. They have also agreed to submit reports periodically for consideration by them all at the Regional Committee and the World Health Assembly. This cooperative process will provide all the countries with information and feedback on the prevailing health and socioeconomic situation. It should also make it easier to reach rational decisions on any adjustments and modifications that need to be made in national, regional and international health policies and strategies, the intention being that, by sharing their experiences, countries will learn from their individual successes and failures.

## THE EUROPEAN HEALTH FOR ALL MONITORING AND EVALUATION FRAMEWORK

*Monitoring* is defined as the maintenance or regular checking of ongoing activities or programmes with respect to predefined objectives. The purpose is to record what the system is actually doing at present and to detect possible deviations from the decided course of action. There is a difference between monitoring and *surveillance*: the latter refers to an ongoing observation of the health status of a population and the factors that may affect it, and is undertaken with the purpose of detecting possible changes at an early stage and initiating appropriate action.

*Evaluation* goes a step further than monitoring in that it attempts to attach value to activities, services, etc. in order to assess how good these are.

The main requirement of the monitoring and evaluation process is that it should be useful to policy- and decision-makers in their appraisal of activities or programmes. It should therefore be timely, and answer at least some of the questions that policy-makers deal with.

The European targets have been carefully developed by Member States and the WHO Regional Office for Europe to meet the needs of the European Region. Therefore, from the beginning, health for all monitoring and evaluation reports have followed the structure of the regional health for all targets. Health for all monitoring and evaluation exercises and successive reporting of progress have taken place alternately, every three years, since 1984–1985.

Each successive monitoring and evaluation has brought about a greater understanding of the responsibilities and purpose of the exercises for the European countries, the Regional Office and WHO headquarters and, most importantly, of the value of sharing collective experience. This has led to continuing improvements in the monitoring and evaluation framework, i.e. the process, mechanisms and tools used for monitoring and evaluation. There follows a short account of the main events of the monitoring and evaluation process so far.

The 65 essential indicators, or groups of indicators, adopted by the Regional Committee in September 1984 were used in the 1985 evaluation exercise. In the light of the results of that first evaluation of the health for all strategy *(9)* these indicators were revised, a process in which many institutions and individuals participated. On the basis of the results, the Regional Committee in 1987 adopted a revised list of indicators and procedure for monitoring progress *(10)*. This set of indicators (73 essential, 63 supplementary) was used in the 1987–1988 monitoring exercise, the results of which were presented to the Regional Committee at its thirty-eighth session in 1988.

Following the 1987–1988 monitoring exercise, the indicators and the monitoring procedure were revised again in order to simplify the process further and give it greater focus in preparation for the second

health for all evaluation in 1991. The changes of substance, as adopted by the Regional Committee at its fortieth session in 1990 *(11)*, are summarized below.

- A flexible "situation assessment" regarding progress towards each target in individual countries was introduced. It requires qualitative description and provides reference points that have replaced the former "non-quantitative indicators".

- About one third of the indicators were left unchanged and about one sixth were reformulated; a small number of new indicators were introduced. All others were either included in the situation assessment or deleted.

- The global indicators and evaluation framework were incorporated into the regional framework so as to avoid the need for Member States to produce two reports according to two separate frameworks (as had been the case in previous exercises).

- A distinction was no longer made between essential and supplementary indicators, since some of the latter had been found to be very important.

The purpose of the second evaluation *(12)* was not only to estimate the level of achievement of health for all but also to see which factors and constraints influenced progress. It indicated that in many countries some information is simply not available at central level because developments at local and community levels, such as in the areas of lifestyles and health promotion, are not always monitored centrally. Furthermore, it showed that international comparability of health information still needs to be improved through greater standardization of definitions and methods of data collection and processing (e.g. surveys).

## HEALTH FOR ALL INDICATORS – DEFINITION AND PURPOSE

Indicators are usually numerical (ratios, proportions, rates), although they can also be qualitative (e.g. existence or absence of a sign, event, etc. that has been shown to be important). Qualitative indicators, and

especially meaningful combinations of them, sometimes provide invaluable insights into the situation and may be preferred by decision-makers. In the context of the health for all strategy, indicators are defined as variables that help to measure change in the level of achievement of the health for all targets *(13)*. This definition is not restricted to numerical indicators.

Indicators concentrate on key measurements that permit a judgement about the whole process. In other words, they reduce the number of possible measurements to a few that are necessary and sufficient for a given purpose. In that sense, indicators already incorporate knowledge about what is important (priorities) and also provide a way of dealing with what is frequently a very large amount of information.

Health indicators in general, and health for all indicators in particular, serve several purposes:

- they are an important tool of health policy formulation and implementation, as set out below in the section on health for all indicators and health policy;
- they are used to measure progress, i.e. they are used for monitoring and evaluating the health situation with respect to specified (health for all) objectives;
- they can provide yardsticks whereby countries can compare their own progress with that of other countries, especially those at similar levels of socioeconomic development;
- although they may not be measurable at present because no adequate information is in place, they are nevertheless adopted for use because they point to what needs to be done (guidance for action, including information systems development); and
- they have a communication and coordination function: for example, when decided in a proper consultation process they constitute an important message to the community about agreed priorities.

Health for all indicators follow the same structure and logic as health for all targets. They cover the health status of the population and

the main health determinants, i.e. lifestyles, environment, health care and general support to health development, including health research, policies, training, information, etc. Not all the health for all targets have statistical (quantitative) indicators, as progress towards some of them is difficult to measure directly in quantitative terms. In such cases a textual description of the situation and the progress is used. Most statistical indicators are related to health status targets (1–12), fewer are formulated for lifestyles (targets 13–17), environment (targets 18–25) and health care (targets 26–31) and only a few are available for the support targets 32–38.

## HEALTH FOR ALL INDICATORS AND HEALTH POLICY

One aspect of health policy is the development of policy objectives. Objectives may be based on comparisons of concrete data (the empirical approach) or not (the theoretical approach). Both approaches have their advantages, and in reality a policy objective may be based on a combination of the two. The empirical approach may be preferable in instances where health policy is not developed at the national level, but rather emerges from decentralized negotiations between those supplying and those paying for services. Relevant and differentiated health indicators are a *sine qua non* for a health information system capable of supporting the development of policy objectives.

Indicators are used in health policy for different purposes: to formulate policy objectives; to implement health policies by means of the managerial process; and to evaluate the effect of health policies. Health for all indicators provide the necessary data – for example on the distribution of health problems and risk factors for health problems, trends, resource allocation and outcome of care – to support these activities.

The same type of information is often required for policy-makers at the local, regional, national and international levels, but it may be analysed, interpreted and presented in different ways. Experience shows that information on a number of health for all indicators is available at the local, regional and national levels. Such indicators are useful for highlighting variations and extremes that have policy implications, which in turn may help in understanding better the health needs of populations, in targeting services to identified needs, and in monitoring the outcome of the services. Examples of indicator-based policies at the national level are heart disease campaigns, financing

services for HIV/AIDS, and screening for cancer; local level examples are the reduction of perinatal and infant mortality, and the provision of antenatal care for residents of small areas. Apart from data from health services, health interview surveys are an important source of data for such indicators and have proved to be invaluable for health management, planning and evaluation. Many survey-based data have contributed to government decisions *(14)*. Finland, for example, drafted a public health law on the basis of health interview survey data *(15,16)* and the United States Government used survey data to formulate the legislation for the Medicare and Medicaid programmes *(17)*. Furthermore, existing national statistics have been complemented by additional data from health interview surveys, which has increased their usefulness substantially *(14)*.

In some countries, the health for all strategy and the monitoring process have already had spin-offs at the policy level, such as the setting-up of research programmes on inequities in health, determinants of health, AIDS and chronic diseases; the strengthening of preventive policy; the development of new monitoring systems; and the strengthening of epidemiology at local levels *(18)*.

## INFORMATION SOURCES

The data sources that can provide information for health for all indicators can be classified into three main groups:

- comprehensive statistical records already established for health or other purposes;
- *ad hoc* (and not necessarily comprehensive) investigation or surveillance systems within the health services; and
- population surveys.

A more detailed classification and discussion has been published by WHO *(13)*.

### Existing Statistical Records

Examples of statistical records already established for health or other purposes include administrative records such as those used for

demographic indicators (including information on topics such as abortion rates and distribution of age at delivery), mortality indicators, data on accidents (motor vehicle traffic accidents in most countries, other types of accidents also included in some), supply of tobacco, alcohol and various nutritional elements, literacy and education rates, human and other resources for health, and coverage rates for various health services. Registration programmes are also used for various health conditions (cancer, cardiovascular diseases and other chronic diseases, including mental health problems). They have the advantage of continuity, but are usually costly to maintain and often limited in geographical coverage.

The information available through these systems is usually presented in a way that is either standard or can be recalculated to permit a standardized presentation. In the case of registers that are limited to certain geographical areas or otherwise defined groups, the information cannot be extrapolated to the total population but time trends can be assessed. Some elements, however, do not provide satisfactory information in practice:

- reports of occupational diseases or accidents, where practices may vary between countries and over time to such an extent that even within-country trend analysis may be difficult; and

- reports of notifiable diseases, which present few problems of identification but may involve severe problems of underreporting.

### Ad hoc Investigation or Surveillance Systems within the Health Services

The main example of this type of system is the "sentinel physician" surveillance system applied in several countries, in which a limited number of general practitioners are asked to report on a defined list of carefully chosen topics (which change from time to time) to complement the information collected routinely or through registries. A sentinel network supplies regular and standardized reports on specific diseases and procedures in primary health care, and usually has a coverage of around 1% of the national population *(19)*.

## Population Surveys

The term "population surveys" is given to a form of data collection in which a sufficiently large number of respondents (but usually a small sample of the total population), representing the target population, is questioned in a systematic and structured way. Population surveys can be used to investigate living conditions, housing demands, the labour force, health, nutrition, etc., or a combination of these. Health interview surveys are a type of population survey that includes questions on health characteristics (perceived health, diseases, disability), health-related behaviour (e.g. smoking, exercise), the use of health services (including preventive services) and a variety of demographic and socioeconomic characteristics. The household is often the sample unit used in surveys and therefore the term "household survey" is also commonly used.

The term "health interview survey" as used in this book refers to all types of population survey with a health questionnaire as a component. Furthermore, the term is not exclusively used to denote a survey by means of face-to-face interviews, but can also refer to telephone interviews and postal surveys. Health interview surveys may also contain a health examination component.

Health interview surveys are relevant for those health for all indicators that are based on:

- information that cannot be collected routinely through registries;
- information outside the realm of services altogether (and cannot therefore be adequately collected through health care related systems such as sentinel surveillance programmes); and
- information that can be collected from the general population directly.

One of the additional benefits of health interview survey data is that they can be used to explore the interrelationships between self-assessed health, health-related behaviour, use of services, and social, economic and demographic variables. For instance, the area of equity in health requires data that can be differentiated by socioeconomic status. Health

interview surveys are therefore an efficient and rich source of information for many indicators.

Information for many of the health for all indicators can only or can best be collected by sample surveys of the population. This applies mainly in the areas of:

- self-perception of health status and the indicators related to disablement;
- lifestyle-related indicators (smoking, alcohol consumption patterns, breast-feeding, physical activity) and indicators related to health promotion;
- (in some countries) indicators related to environmental health (water/sanitation, housing); and
- those aspects of health service provision and use where individual response is a major factor (e.g. family planning).

In summary, the relevance of health interview surveys for the purposes of health for all lies in the provision of data for health for all indicators that cannot sufficiently or efficiently be assessed by other methods, and in the possibility of investigating relationships with other health for all indicators and background characteristics.

## HEALTH FOR ALL INDICATORS THAT ARE ONLY OR BEST MEASURED BY A HEALTH INTERVIEW SURVEY

On the basis of the original list of proposed health for all indicators *(8)* a list of indicators was selected for which health interview surveys may be relevant (in some cases in addition to other sources). This list was compiled by a working group during the first Consultation to Develop Common Methods and Instruments for Health Interview Surveys in 1988 *(2)*. Because of subsequent revisions in targets and indicators, the list has undergone a number of changes; the most recent list (Table 1) is based on the 1991 revision of the health for all targets *(1)*.

The revisions referred to have resulted not only in changes in wording, but also substantial transformations, deletions and additions

Table 1. List of health for all indicators for which health interview surveys are relevant

*Equity in health (target 1)*

1.1 Differences in health status between countries

1.2 Differences in health status within countries

*Health and quality of life (target 2)*

2.2 Assessment of perceived health[a]

2.6 Assessment of social health and support

2.7 Assessment of quality of life

2.8 Healthy life expectancy: indices linking life tables with functional aspects of health

*Better opportunities for people with disabilities (target 3)*

3.2 Percentage of disabled persons of working age engaged in regular occupational activities[a]

3.3 Assessment of quality of life for people with disabilities

*Reducing chronic disease (target 4)*

4.1 Number of days of temporary disability per person per year, by age and sex[a]

4.2 Percentage of the population experiencing different levels of long-term disability, by age and sex[a]

4.5 Disability-free life expectancy at birth and at ages 1, 15, 45 and 65 years, by sex[a]

4.6 Incidence and prevalence of selected chronic conditions: all ages, by sex; people aged 65 years and over, by sex[a]

4.9 Long-term incapacity for work, by age and sex

*Healthy aging (target 6)*

6.5 Assessment of quality of life for those aged 65 years and over

*Reducing mental disorders and suicide (target 12)*

12.2 Assessment of quality of life for people with mental disorders

12.3 Mental health[a]

*Healthy living (target 16)*

16.4 Percentage of neonates having a birth weight of at least 2500 g[a]



BEST COPY AVAILABLE

Table 1 (contd)

| | |
|---|---|
| 16.5 | Percentage of children with acceptable weight for age and/or weight for height |
| 16.6 | Percentage of children breast-fed at six weeks, three months and six months of age[a] |
| 16.7 | Energy expenditure patterns, by age, sex and socioeconomic groups: total daily energy expenditure, daily energy expenditure for physical leisure activities, energy expenditure for physical leisure activities of higher intensity |
| 16.10 | Distribution of body mass index by age and sex, including percentage of population with a body mass index (weight/height$^2$) greater than 30 kg/m$^2$ [a] |
| 16.11 | Adequate nutrition |
| 16.12 | Exercise[a] |
| | *Tobacco, alcohol and psychoactive drugs (target 17)* |
| 17.2 | Distribution of alcohol consumption by quantity consumed, age and sex |
| 17.3 | Consumption of the principal narcotic drugs covered by the Single Convention on Narcotic Drugs, 1961 (as amended 1972) |
| 17.6 | Consumption of pharmaceutical psychotropic substances |
| 17.10 | Proportion of population who:<br>– are nonsmokers[a]<br>– are heavy smokers (20 or more cigarettes per day)[a]<br>– have never smoked[a]<br>– have stopped smoking for the past two years[a]<br>– have reduced smoking for the past two years[a] |
| | *Human ecology and settlements (target 24)* |
| 24.3 | Proportion of population that is homeless and proportion of population that lives in substandard accommodation |

[a] An instrument for this indicator (or part of it) has been recommended by the first, second or third Consultation to Develop Common Methods and Instruments for Health Interview Surveys (see the section on recommended instruments on page 51).

of indicators. Several of the improvements are the result of the recommendations of the Consultations to Develop Common Methods and Instruments for Health Interview Surveys, which are described further in Chapter 2.

2

# Developing Common Methods and Instruments for Health Interview Surveys

As pointed out in the previous chapter, it has become generally accepted that health interview surveys are invaluable for health information systems because they provide complete, comprehensive and integrated information about health, health-related behaviour, medical consumption, and personal and household characteristics. Analysis is not frustrated by limitations in variables, as it is possible to include in the questionnaires the necessary background information about the respondent and his or her family. Health interview surveys are a relatively cheap and quick tool, especially when compared with the costs of routine data collection by health care agencies.

An increasing number of countries in the European Region have already had experience with health interview surveys within their national health information framework. Statistics Netherlands, for example, has conducted a continuous health interview survey since 1981. Outside the European Region well known examples include the health interview survey in the United States, undertaken continuously since 1957, health interview surveys in Japan, in progress since 1953, and the impressive disability surveys conducted by Statistics Canada since 1983.

In the 1980s, increasing contacts between statistical bureaux, ministries of health and individuals in various countries pointed to the need for an international exchange of knowledge about the methods and instruments for health interview surveys. This need was evident from two observations.

1. Despite the undisputed relevance of health interview surveys for health information systems and the existence of continuous health interview surveys in some countries, many countries carry them out on an ad hoc basis if at all. These surveys seem to have developed largely independently, and decisions about them and the questions they ask are made in the specific context of health problems, health care systems and policy issues in existence at any particular time in the different countries. Not surprisingly, this gives rise to a variety of technical solutions. However, many of the differences in survey methods and instruments seem to be unnecessary.

2. A great number of health for all indicators appear to be completely dependent on the availability of data from health interview surveys (see Chapter 1). The health for all monitoring and evaluation exercises showed that information on only a small proportion of these indicators was available in a sufficient number of countries. Unless significant improvements are made in this situation, the lack of information will hamper monitoring of progress towards the targets that depend on survey indicators. WHO therefore has a great deal of interest in ensuring a high level of comparability between countries with respect to the measurement of health for all indicators. Other well known endeavours to attain international comparability of health statistics are the use of the International Classification of Diseases *(20)*, most importantly to code cause of death, and the more recently developed International Classification of Impairments, Disabilities, and Handicaps (ICIDH) *(21)*.

Although many countries have been conducting health interview surveys for many years, international comparison of survey data is a relatively new issue. The lack of availability and comparability of these data has been found to be a major constraint in this regard.

## COVERAGE OF HEALTH FOR ALL INDICATORS IN HEALTH INTERVIEW SURVEYS (1980–1990)

To gain more insight into the coverage of health for all indicators in health interview surveys, an inventory study was carried out in 1990 by Statistics Netherlands, at the request of the WHO Regional Office for Europe *(22,23)*, by means of a questionnaire to all statistical bureaux and relevant research institutes of the countries in the European Region and some selected countries outside the Region (Australia, Canada,

Japan and the United States). The total response was 59 questionnaires from 33 bureaux, persons and/or institutions in 26 countries.

This inventory provided information on 17 of the health for all indicators for which health interview surveys are relevant (see Table 1); the results are summarized in Table 2 and Fig. 1. The data for each of these 17 indicators were collected by at least one country. The study showed that there is considerable variation in the number of indicators that countries cover by means of a survey; the greatest number covered by any country was 15 and the smallest 2. Indicators such as perceived health (2.2), long-term disability (4.2) and smoking (17.10) were covered by surveys by almost all countries, while others such as birth weight (16.4) were covered in only a few countries. In general it can be concluded that coverage by survey is most frequent for the selected indicators relating to different aspects of health status (targets 1–12), followed by the indicators on healthy lifestyles (targets 13–17).

The study included an inventory of the actual survey methods and questions used in the different countries in collecting information on health for all indicators. Differences were found in the method of sampling, the inclusion or exclusion of certain institutionalized groups (e.g. in nursing homes, prisons, military barracks), the method of data collection and the actual wording of questions. The study also showed that many questions, which in principle apply to the same indicator, cannot provide comparable results because they lack uniformity. All these differences limit the comparability of data from different countries, and confirm the need to develop and use agreed standards in surveys.

The study also showed that the available international data from health interview surveys in the period from 1980 to 1990 are not very suitable for health for all monitoring. Some health for all indicators for which information can only or best be collected by means of a survey are only covered in a few countries; but also when the indicators are covered, the results are often not comparable. International and interregional comparisons of population-based data on health conditions and determinants, which are of paramount importance for setting health objectives and for good management of resources, are therefore considerably restricted or even impossible. However, it was also concluded that most of the differences in health interview surveys

Table 2. Coverage of health for all indicators in health interview surveys in various countries, 1990[a]

| Country | Indicator | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.2 | 3.2 | 4.1 | 4.2 | 4.5 | 4.6 | 4.9 | 16.4 | 16.6 | 16.7[b] | 16.10 | 16.11 | 17.2 | 17.3 | 17.6 | 17.10[c] | 24.3[d] | Total[e] |
| Austria | x | x | x | x | | x | x | | | | x | | | | | x | x | 9 |
| Belgium | | | | | | x | | | | | x | x | x | x | x | x | | 7 |
| Bulgaria | x | x | x | x | x | x | | x | x | x | x | | x | | | x | x | 13 |
| Denmark | x | x | x | x | x | | x | | | x | x | x | x | | x | x | | 12 |
| Finland | x | x | x | x | | x | x | | | x | x | x | x | x | x | x | x | 14 |
| France | x | x | x | x | x | x | x | | | | x | x | x | x | x | x | | 13 |
| Germany[f] | x | x | | x | | | x | | | | | | | | | x | | 5 |
| Hungary | x | | x | x | | x | x | x | | | x | x | x | | | x | | 10 |
| Iceland | x | x | | x | | | x | | | x | x | x | x | | | x | | 9 |
| Ireland | x | x | | x | | | x | | | | | | | | | | x | 5 |
| Israel | x | x | | x | | | | | x | | | | | | | x | | 5 |
| Italy | x | x | x | x | | x | x | | | x | x | x | x | x | x | x | x | 14 |
| Netherlands | x | x | x | x | x | x | x | x | x | x | x | x | x | | x | x | | 15 |
| Norway | x | x | x | x | | x | x | | | x | | x | x | | x | x | x | 12 |
| Poland | x | x | x | x | | x | x | x | | x | | x | | | | x | | 10 |
| Portugal | x | x | x | | | x | | | | | | | x | | | x | | 6 |
| Spain | x | x | x | x | | x | x | | | x | x | x | x | | x | x | | 12 |
| Sweden | x | x | x | x | x | x | x | | | x | x | | x | | x | x | x | 13 |
| Switzerland | x | x | x | x | x | x | x | | | x | x | x | x | | x | x | | 13 |
| Turkey | | | | | | | | | x | | | | | | | | x | 2 |

Table 2 (contd)

| Country | Indicator | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2.2 | 3.2 | 4.1 | 4.2 | 4.5 | 4.6 | 4.9 | 16.4 | 16.6 | 16.7[b] | 16.10 | 16.11 | 17.2 | 17.3 | 17.6 | 17.10[c] | 24.3[d] | Total[e] |
| United Kingdom | x | x | x | x | x | x | x | x | x | x | x | x | x | | | x | x | 15 |
| Subtotal, European Region | 19 | 18 | 15 | 18 | 7 | 15 | 16 | 5 | 5 | 12 | 14 | 13 | 15 | 4 | 10 | 19 | 9 | |
| Australia | x | x | x | x | | x | x | | x | x | x | | x | x | x | x | | 13 |
| Canada | x | x | x | x | | x | x | | | x | x | x | x | x | x | x | | 13 |
| Japan | x | | x | x | | x | x | | | x | x | x | x | | | x | | 10 |
| United States | x | x | x | | | x | x | | x | x | x | x | x | | | x | | 11 |
| Total[g] | 23 | 21 | 19 | 21 | 7 | 19 | 20 | 5 | 7 | 16 | 18 | 16 | 19 | 6 | 12 | 23 | 9 | |

[a] Adapted from Evers *(22)*; this table includes only the indicators of this study that are also included in the 1993 list of indicators (see Table 1 of the source).

[b] Data based on 1987 definition, "amount of time spent daily on voluntary physical activities" *(10)*.

[c] "x" means that one or more of the five components of this indicator (Evers *(22)*, Table 1) are covered.

[d] "x" means that the component "proportion of population that lives in substandard accommodation" of this indicator (Evers *(22)*, Table 1) is covered.

[e] Out of 17 indicators.

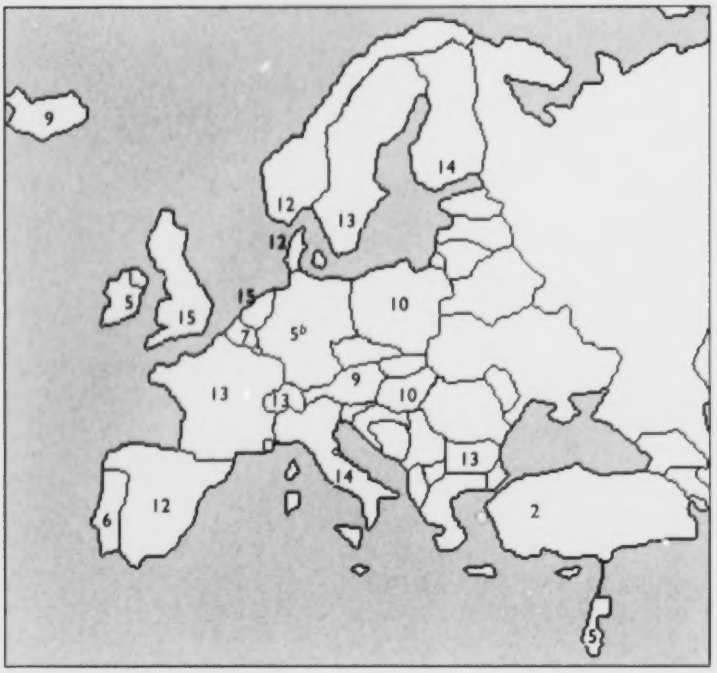
[f] Information relates to the Federal Republic of Germany prior to reunification.

[g] Out of 25 countries.



BEST COPY AVAILABLE

Fig. 1. Coverage of health for all indicators through health interview surveys in countries of the European Region, 1990 (total number of indicators = 17)[a]




[a] Adapted from Evers *(22)*.

[b] Information relates to the Federal Republic of Germany prior to reunification.

The designation and the presentation of material on this map of the WHO European Region Member States (as at 31 August 1995) do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontiers or boundaries.

could be harmonized by using common methods and questionnaires, cut-off points and classifications.

## HEALTH INTERVIEW SURVEY PROJECT

It was felt that the situation regarding the lack of comparability of survey data would be improved by encouraging those involved in health interview surveys at national level to benefit from each other's experience and to learn from each other's successes and failures by means of international meetings and the creation of a network of experts in the area. The major long-term objective was twofold:

- to develop common methods and instruments (questions) for at least a core set of health for all indicators; and
- to get these used by countries in order to achieve better international comparability and enhance the value and use of survey results.

Following an intensified exchange of views between the WHO Regional Office for Europe and Statistics Netherlands, the Regional Office requested Statistics Netherlands to organize the first Consultation to Develop Common Methods and Instruments for Health Interview Surveys. Sponsored by the Regional Office, this took place in June 1988, followed by the second Consultation in September 1990 and the third in September 1992.

Common knowledge and collaborative research accumulated in connection with the consultations. With the respective rounds of health for all monitoring and evaluation, the proceedings of the consultations were disseminated and data on the health for all indicators collected. However, it was also necessary to obtain more complete feedback from Member States on the progress that could be expected in collecting internationally comparable data, both immediately and in the longer run. These aspects of the project are described on page 28.

## CONSULTATIONS TO DEVELOP COMMON METHODS AND INSTRUMENTS FOR HEALTH INTERVIEW SURVEYS

For each consultation, a number of experts were invited who were involved in health interview surveys in the European Region or in

selected countries outside the Region (Australia, Canada, Japan and the United States) where continuous or at least regular surveys have been carried out. The participants in the three consultations are listed in Annex 1.

The aims of the three consultations can be summarized as follows:

- to review the regional health for all indicators, including revised and new ones, for which information can best be provided through health interview surveys;
- to consider whether the list of health for all indicators lacks relevant indicators normally covered by health interview surveys and, if appropriate, to recommend additional indicators;
- to develop common methods and instruments for collecting information for the above-mentioned indicators (this relates to review and coordination of existing instruments and the development of new instruments);
- to provide an overview of and to discuss current and future health interview surveys in the European Region and selected countries outside the Region, in order to assess the implications for collecting information on health for all indicators in these countries;
- to discuss the possibilities of including recommended common instruments in current and future health interview surveys.

In each consultation a number of general subjects related to these aims were discussed. However, most of the time was reserved for the development of common instruments for specific health for all indicators. The main discussion topics were introduced by means of working papers prepared by the participants (see Annex 2). An overview of the main discussion items in the three Consultations is given in Table 3. Reports have been produced for all three consultations *(2–4)*. For 11 indicators, common instruments could be recommended during the consultations (see the section on recommended instruments beginning on page 51). For four other indicators for which common instruments are still in development, the current situation is described in the section

on indicators for which recommended instruments are not yet available, beginning on page 95. Where possible, comparability with the ICD and ICIDH classifications was considered (in particular for long-term disability and chronic conditions).

## First Consultation, 1988

At the first Consultation, agreement was reached on the list of health for all indicators for which health interview surveys are relevant. An updated overview of these indicators, including the modifications that were carried through in later revisions of the health for all indicators, is presented in Table 1 (see page 13).

Instruments were recommended for six of these indicators: perceived health, temporary disability, long-term disability, smoking, birth weight and breast-feeding. It was also recommended that an indicator on adult weight and height should be added to the list. For breast-feeding, the health for all indicator was broadened to include breast-feeding at six weeks of age.

The methodological issues that need to be considered when designing health interview surveys were also a main topic of discussion.

To facilitate the monitoring of progress towards health for all, it was recommended that regular health interview surveys should be implemented in all countries of the European Region. It was further advocated that WHO should distribute the instruments recommended by the consultations to all countries of the European Region, so as to promote their implementation.

## Second Consultation, 1990

The report of the 1990 inventory study of coverage of health for all indicators in health interview surveys was discussed, and it was recommended that the exercise should be repeated after about five years, taking into account the recommended instruments.

The participants learned that there was some evidence of an increase in the number of health interview surveys being carried out, and

Table 3. Overview of three Consultations to Develop Common Methods and Instruments for Health Interview Surveys

| Consultation | Period | Participants (countries) | Working papers | Main discussion topics |
|---|---|---|---|---|
| First | 21–23 June 1988 | 19 (13) | 6 | Selection of health for all indicators to be covered by health interview surveys<br>Methodological issues in health interview surveys<br><br>Measurement of<br>– perceived health<br>– temporary disability<br>– long-term disability<br>– smoking<br>– birth weight<br>– breast-feeding |
| Second | 18–20 September 1990 | 22 (13) | 5 | Coverage of health for all indicators in health interview surveys<br>Promotion of health interview surveys and use of recommended instruments<br><br>Measurement of<br>– socioeconomic classification<br>– disability-free life expectancy<br>– long-term disability<br>– body mass index<br>– chronic physical conditions<br>– physical activity |

Table 3 (contd)

| Consultation | Period | Participants (countries) | Working papers | Main discussion topics |
|---|---|---|---|---|
| Third | 22–24 September 1992 | 22 (12) | 7 | International comparisons of socioeconomic inequalities in self-reported health<br>Promoting the use of recommended instruments<br><br>Measurement of<br>– physical activity<br>– mental health (conditions and disability)<br>– chronic physical conditions<br>– disability-free life expectancy<br>– food consumption<br>– alcohol consumption |

that the Council of Europe *(24)* had adopted the long-term disability instrument recommended by the first Consultation as the minimum set of questions that should be used in health interview surveys, with a few additions (see below).

With respect to specific health for all indicators, recommendations were made for measuring disability-free life expectancy, long-term disability, body mass index (on the basis of self-reported adult weight and height) and socioeconomic classification. For long-term disability, three optional items were added to the instrument recommended by the first Consultation, as suggested by the Council of Europe *(24)*. In addition, two summary scores were recommended, one for handicap and one for disability. A broadening of the title of the indicator on body mass index was recommended: apart from the percentage of the population with a body mass index greater than 30 $kg/m^2$, the distribution of the body mass index was to be included – this has since been adopted for use by the European Region of WHO.

The measurement of chronic physical conditions was also discussed and a short list of those that could be included in health interview surveys was proposed (see the section on chronic conditions (physical) on page 95).

Regarding physical activity it was concluded that the questionnaire based on the Quebec Health Survey, suggested by WHO in 1990 *(11)*, could not be used in its current form in other cultural settings. This subject was followed up in the third Consultation.

The participants discussed the proposal of the WHO Regional Office for Europe that a common health interview schedule should be developed. They concluded that the process of coordinating ongoing health interview surveys in the European Region and stimulating new ones should be encouraged and supported. This is particularly important for reorienting health information systems in support of the health for all strategies. The process should be aiming at:

- encouraging countries to conduct health *interview* surveys regularly;
- coordinating with health *examination* surveys;

- improving the methodologies used and the efficiency of surveys; and

- facilitating the use of common methods and instruments in order to improve the availability of comparable population-based data.

It was recommended that the Regional Office use future health for all monitoring exercises to encourage countries to use the recommended instruments and, if possible, to coordinate timetables for forthcoming surveys. It was also recommended that a WHO collaborating centre for population-based health surveys be designated, and that the possibilities for collaboration with other international organizations be explored.

## Third Consultation, 1992

At the third Consultation, instruments were recommended for the measurement of physical activity and for chronic mental health conditions. For mental health, the instruments were based on a study undertaken by the Department of Social Psychiatry of the University of Groningen (a WHO Collaborating Centre) *(25)*. For the measurement of disabilities because of mental health problems, an instrument was recommended for temporary disabilities only.

Regarding the measurement of disability-free life expectancy, some further recommendations were made in addition to those on this subject made by the second Consultation.

For the measurement of food consumption through health interview surveys, it was recommended that priority be given to measuring the intake of fats (total and saturated) relative to total energy intake. It was also recommended that trends in the availability of macronutrients should continue to be monitored.

With respect to alcohol consumption, it was recommended that the information collected should include the quantity consumed during a "typical" or "average" period of time, and that the questions on this topic should, where possible, be self-completed. No specific instrument was recommended, but some illustrative sets of questions were presented that could be applied in trial studies.

Two important items that need further study were touched upon: the relationship between health interview and health examination surveys, and ways of obtaining information on the health of people resident in institutions.

The results of a study on international variation in socioeconomic inequalities in self-reported health, undertaken by the Department of Public Health and Social Medicine, Erasmus University, Rotterdam and Statistics Netherlands *(26)*, were also discussed. Despite the limited comparability of the data on socioeconomic and health indicators requested from the participating countries, which restricted the possibilities for comparative analysis, the study yielded some important findings. For men, the smallest inequalities were found in Norway, Spain, Sweden and the United Kingdom and the largest in Canada, Germany, Italy and, in particular, the United States. Denmark, Finland, Japan and the Netherlands occupied an intermediate position. For women, the international pattern was less clear.

With respect to the health indicators used, obviously incomparable data were excluded from analysis, but data resulting from survey questions with only minor differences in wording or structure were included. This probably did not cause a major bias in the study's findings, because the same pattern of international variation in health inequalities was found when the analysis was restricted to optimally comparable health indicators. However, in order to improve the possibilities for reliable international comparisons, it was recognized that more countries should use comparable questions to measure health and should also include education and at least one of the other socioeconomic variables (income, occupation) in their surveys.

It was recommended that the study be repeated in the future, preferably every five years.

## Opportunities for Improving the International Comparability of Health Interview Survey Data

One of the conclusions of the 1990 study on the coverage of health for all indicators in health interview surveys was that, despite a large variation in the design of questionnaires for and techniques of health interview surveys, most of the differences could be harmonized by

using common measurement instruments. The Regional Office therefore undertook a follow-up mailing exercise in 1992, requesting the opinion of survey practitioners on opportunities for harmonization *(27)*. More specifically, the aims of this investigation were to obtain an indication of how far the health interview surveys that were already planned for 1993–1994 were likely to produce data that are compatible with the recommendations of the first and second Consultations, and to take stock of the opportunities and/or problems that are anticipated with regard to the harmonization of survey data in future.

It was concluded that more or less comparable data would probably be produced by a significant number of countries but that, in many cases, minor modifications of the instruments used would be necessary, as these instruments were slightly different from the recommended instruments. It may be useful to consider the surveys carried out in Europe in three groups:

- those that can immediately provide comparable results for some of the health for all indicators;
- those for which, with little effort, survey questions can be changed to produce comparable results or, possibly, even existing results can be adapted to make comparable data sets; and
- those for which new or additional questions are required.

For six of the eleven health for all indicators for which common instruments have been recommended by the consultations, it appeared that no or only minor differences in measurement exist between countries. In order to evaluate the experiences of countries with measurements for these six indicators, and to show the potential for progress, a further study was initiated by Statistics Netherlands and the Regional Office in 1993. This study is described in Chapter 5.

## PROJECT REVIEW

In brief, the health interview survey project has so far brought about:

- three international consultations during the period 1988–1992, which provided a forum for exchange of experience and which

resulted in the formulation of recommended instruments for 11 health for all indicators;

- a study of health interview surveys in 1990 to assess the coverage of health for all indicators in such surveys, followed by a second study in 1992 to obtain an overview of the opportunities for countries to harmonize measurements for health for all indicators; and

- a more in-depth follow-up study carried out in 1993–1994 to evaluate the experiences with six (recommended) measurement instruments.

Experience after some five years of consultations and studies has shown that in most European countries there is a widespread interest in the development of health interview surveys. It is now generally recognized that the information coming from surveys (coverage of the general population, integrated data on health, lifestyle, use of services, background characteristics) is extremely useful. Surveys have proved to be an attractive instrument for the monitoring of health and the health behaviour of populations: their policy relevance at the national and international level is well established and growing, and the number of European countries performing them is increasing.

Experience has also shown, however, that differences between questions in existing health interview surveys in various countries, although often unnecessary, are difficult to overcome. Once a country has realized a survey, it is advantageous to repeat it at least partially unchanged so as to permit trend evaluation at the national level. Unfortunately, in many cases, the areas countries wish to retain unchanged often include the health for all indicators for which the consultations have advised the use of common instruments.

Although reaching understanding and agreement on making changes is a time-consuming process that appears to resist any attempt at acceleration, the health interview survey project has been successful with respect to its first objective: the development of common instruments for some health for all indicators. While that process needs to be extended, the second objective of the project – the actual implementation of these instruments – now has to be actively pursued. Chapter 5 highlights the activities and prospects in this regard.

3

# Health Interview Survey Methodology

This chapter highlights the most important components of health interview survey methodology, with respect to measurement of health and health-related indicators in general and health for all indicators in particular. It is not, however, a complete guide to the design and conduct of a health interview survey. For this purpose the reader is referred to literature on research methodology in general *(28)* and health interview surveys in particular *(29–31)*.

Methodological aspects of surveys, such as data collection methods and sample design, are important because of their effect on data quality. As Cartwright *(29)* has pointed out, "survey data can only be as good as the weakest process in their collection". The quality of data collected is determined by the validity and reliability of the questionnaire and by a number of other factors associated with population coverage, non-response and interviewer and respondent characteristics. The validity and reliability of survey data should be regularly assessed, and it is therefore desirable that all surveys should include reliability and validity checks *(28,32)*. International collaboration and exchange of knowledge on these issues is particularly important.

Some methodological issues were discussed during the consultations, resulting in some general recommendations. A number of others that are important for comparability between countries, such as age standardization and weighting for non-response, have not yet been discussed and are only mentioned briefly in this chapter. Exchange of

experience on these topics is also important in order to continually improve the quality of survey statistics.

The following sections cover data collection, population (sample, size, structure) and a summary of considerations related to data processing and presentation. The conclusions from the consultations are incorporated in these sections.

## DATA COLLECTION

Before data collection can begin, many decisions and choices have to be made concerning the construction and content of the questionnaire for a health interview survey and related issues (recall period, language, mode of data collection), alternatives to personal interviews (i.e. post, telephone), use of proxy informants, interviewer characteristics and the use of health examinations.

### Construction of the Questionnaire

The questions to be included in the questionnaire are determined by the purpose of the survey and the analysis plan that has been devised in advance. For most of the health for all indicators that can be covered by health interview surveys, the measurement objectives and analytical requirements have been defined and agreed (see Chapters 1 and 4). While the questionnaire should contain all the questions that are necessary for the purpose of the survey and the analysis of the results, they should be as simple and short as possible, and redundant questions should be carefully avoided in order to minimize the burden on the respondents and to increase the cost–effectiveness of the survey in general. Questions must be clear and precise and at a level that the least gifted person can answer.

The questions can have precoded answers or allow open responses. Most questions in health interview surveys have precoded, fixed response categories from which the respondent selects one or more answers. The design of this type of question is more difficult because all possible responses should be included. The advantage is that respondents' answers are immediately recorded in appropriate categories. With open ended questions the respondent formulates his or her own answers, which are then copied verbatim on the questionnaire.

Although such questions are sometimes unavoidable, interpreting and classifying the answers require more skill and additional effort on the part of both the interviewers and the investigators.

It is desirable to ask the respondents only those questions in the interview schedule that are relevant for them. For example, a man should not be asked about diseases that only affect women and vice versa, and a college student should not be asked what profession he or she has. Besides the use of completely different questionnaires for different groups of respondents, special routing of questions is often used. Such routing is also necessary when in some sections of the questionnaire a procedure involving two or more stages is used. This procedure is also called conditional questioning: a respondent only proceeds to the second stage if the answers on the "filter" or screening questions in the first stage have certain specific values. This procedure is, for instance, often used in the assessment of mental health problems (see the section on chronic conditions (mental) on page 65, and Annex 3).

Complex routing of questions makes high demands on the design and layout of the questionnaire and increases the burden on the interviewer or, in the case of self-administered questionnaires, the respondent. For face-to-face and telephone interviews, problems caused by complex routings can be solved by using the technique of computer-assisted interviewing (CAI), which is already practised in some countries. Of course, CAI requires a heavy input of skilled resources in the preparatory phase, but once operational it reaps enormous benefits for the collection and editing of data in large surveys (see the section on data processing and presentation, beginning on page 45).

Because health interview surveys usually include a large number of questions, some logical ordering of questions should be used, determined on the basis of psychological and behavioural knowledge. For example, a general question on a certain topic can come before or after specific ones on the same topic. The advantage of asking the specific questions first is that they may stimulate people to think about the topic, after which the general question can summarize their views. However, sometimes a general attitude (e.g. perceived health) may be biased when specific items (e.g. diseases) have already been mentioned; this is not therefore the appropriate approach and the order

should be reversed. The influence of question order should also be considered when designing repeated surveys: differences may affect comparability from year to year.

Survey questionnaires should preferably include instruments of proven validity and reliability.

### Memory

The extent to which questions have to rely on the memory of the respondent should be minimized, because recall from memory can be a source of bias. The magnitude of the recall bias depends on the length of the recall period and the saliency of the events to be recalled (besides respondent attention or motivation in general). For example, for the collection of data on temporary restricted activity, the period for which an individual is requested to report restricted activity should not exceed two weeks because under- or overreporting as a result of memory gaps has been demonstrated when longer periods are used. Similarly, there can be problems in getting informants to remember accurately the number of alcoholic drinks they have consumed in the past seven days. It is possible to design diaries and other aids to memory to minimize such difficulties. Furthermore, it is necessary to examine the variability in reporting over the period concerned to assess recall effects and, possibly, to make adjustments to account for them.

### Language

Many countries have significant minorities in the population who may not be fluent in the main language and are therefore unable to participate in the survey if the questionnaire is only available in this language. The use of questionnaires in different languages, interviewers with adequate knowledge of alternative languages, or interpreters should be considered when the expected effect of excluding these groups is not marginal. In general there is some loss of standardization in questions when different languages are used: it is not always possible to find words or phrases with precisely the same meaning. Furthermore, the significance of health and health-related problems can differ substantially between different cultures. These limitations are even more serious when interpreters are used, because the researcher has no control over the quality of interpretation.

## Proxy Informants

The basic design of many surveys is the collection of interview data from all occupants of samples of households or addresses. Some information about the household can be collected from one person who acts in this way as proxy informant for the others. This is a useful approach and proxy informants are therefore also frequently used for obtaining information about children, and in some cases about people with mental and sensory disabilities. The use of a proxy informant is, however, less appropriate for some areas in the likely content of health surveys, for example questions on feelings. There is evidence that details of specific impairments or disabilities can be difficult to assess with a proxy informant *(33)*. This applies in particular to those in the mental and sensory areas and to topics, such as incontinence, that people may wish to keep private even from other members of their family. For perceived health, however, Van Sonsbeek *(34)* did not find a bias – at any aggregated level in the general population – as a result of proxy interviewing.

The use of proxy informants is most justified when the true informant is in some senses a dependent of the proxy. This is the case with young children and the very ill or disabled. Not only will the proxy be likely to be able to answer fully and accurately but, from an ethical viewpoint, such an approach is acceptable. In household-based surveys there are two other groups who tend to be more difficult to contact: married men and young single adults. Proxy interviews are often taken for these.

The term "proxy effect" is used to describe the bias that occurs when the report of the true informant deviates from the report of the proxy informant. Some areas where proxy effects are likely have already been mentioned. A number of recent studies could not demonstrate a proxy effect with respect to rather severe health problems *(34–36)*.

Opinions on the role of proxy interviewing in relation to indicators such as alcohol intake and smoking differ substantially. On the one hand it can be argued that proxy questioning may lead to increased, and possibly truer, estimates of consumption than self-reporting in areas where these habits are considered socially undesirable *(37)*. On the other hand, proxy questioning may not be sufficiently informative

because many people do not necessarily disclose their behaviour to others – particularly spouses and parents – in a detailed and precise manner.

The philosophy of proxy use also differs by country. While in the United Kingdom proxy interviews are only accepted as a last resort, in France and the Netherlands they are used as a standard practice. In order to prevent non-response, proxy interviewing should be seriously considered, at least for those parts of the interview where proxy effects are unlikely. For other parts of the interview, it may be possible for the interviewer to leave a questionnaire to be self-administered by the true informant, and collect it later.

### Face-to-face Interviews and Self-completion

The preferred mode of data collection in health surveys is the personal or face-to-face interview, in which the interviewer asks questions and assesses the answers, usually by means of a structured questionnaire. The advantages are that the response rates are generally higher and the questionnaires are usually filled in more completely than with other methods. For some topics, however, it may be useful to introduce some type of "self-completion" by the informant. Self-completion methods are usually preferred when the subject matter is sensitive (e.g. alcohol, drugs, contraception or sexual behaviour) and/or it is difficult to ensure complete privacy for an interview. One method is to introduce a self-administered questionnaire during the interview and to allow the informant time to complete it before carrying on with the interview. Another is to leave the questionnaire behind after the interview and to collect it later. With this method all the questions and answers are dealt with in complete privacy, although it should be noted that people will tolerate relatively long interviews much better than very long questionnaires *(38)*. In a further method, the interviewer asks questions in the usual way, while the informant replies according to a set of answers presented on a showcard. This procedure can be used for two reasons: to inform the respondent about the response possibilities and, when answers are coded, to encourage the respondent to give the correct rather than a socially desirable answer (it is possible to carry out interviews in this way without the interviewer being aware of the answers).

## Postal and Telephone Surveys

Large-scale national surveys are expensive, and there is continuous pressure to explore alternative methods of interviewing. Postal surveys and interviewing by telephone are cheaper than face-to-face interviews.

The telephone interview is an attractive method because it is relatively cheap and flexible. At present, however, access to telephones is not sufficiently widespread in many countries; telephone ownership is likely to be biased towards those groups who tend to be in higher health status groups. Other disadvantages of this method are: the more rapid pace of communication often results in less complete information being given and more "don't knows" *(39)*; it is less suitable for obtaining data on sensitive issues; and people over 65 years old may be overrepresented because they are more likely to be at home to answer the telephone *(32)*. For health interview surveys, telephone methods are not recommended as the sole source of information, but they may be used for supplementation or validation purposes.

Postal methods also have well known advantages and disadvantages. Two important disadvantages are low response rates, and the difficulties of identifying individuals from widely used sampling frames such as postal files. The response rate is also dependent on the length of the questionnaire: the longer the questionnaire the lower the response. While telephone interviews generally yield higher response rates, mail interviews can provide data of higher quality, for instance with respect to sensitive issues *(30)*.

Postal methods can be used effectively for particular populations or purposes. One example is information on infant feeding practices. Experience has shown that it is easy to gain access to women who have recently had a baby and these women, being very involved in the subject matter of the survey, produce high levels of response. Postal screening methods are also cost-effective for identifying samples of small sub-groups for further study, e.g. people with disabilities *(40)* or women of child-bearing age.

## Health Interview and Health Examination Surveys

Surveys that consist of physical examinations, functional assessment of lungs and heart, laboratory measurement of blood and urine, etc. are

generally called health examination surveys. Although most of the topics that are normally included in a health survey can be investigated using traditional structured questions in a personal interview (health interview survey), the scope for including additional measurements and tests is increasing. For certain types of disorder (e.g. cardiovascular disease) health examinations are essential in providing objective information about the disease and/or its risk factors. In such cases, health examination and health interview data should ideally be collected as part of the same survey, because they are complementary. Where this is not possible, efforts should be made to link the data in some way.

### Interviewers

Besides the tasks of asking the questions as laid down in the questionnaire and gathering the responses, the interviewer also has to identify and track down appropriate people to be interviewed, to persuade them to cooperate in the survey, to clarify certain issues, to ask supplementary questions if necessary, and to conform to divers ethical standards. Interviewers for health interview surveys are not normally health professionals and, given the requirements mentioned, considerable attention has to be paid to their selection, training and supervision. When examinations are included in the interview, professional staff may need to be recruited and trained. Experience in the Office of Population Censuses and Surveys in London has demonstrated, however, that much is possible with careful training and monitoring of lay interviewers and standardizing of equipment. For example, lay interviewers have carried out measurements of height, weight, vision and, more recently, blood pressure using electronic sphygmomanometers, and have collected 24-hour urine samples.

The demographic characteristics of the interviewer – race, age or sex – can produce measurement biases when the measurements are related to these characteristics; these biases are not present when other topics are discussed *(28)*.

## POPULATION – SAMPLE, SIZE AND STRUCTURE

Many of the decisions about sample design will depend on the resources available and the need for information relating to different

groups. A number of methodological aspects, such as determination of sample size and method of sample selection, are closely related to the main research questions and the sociocultural context in which the study is conducted.

## Sample

The sample for a health interview survey should represent the general population of all or part of the country. The sample can be drawn by several methods, for example, by using:

- address or postal files
- electoral registers
- population registers
- telephone directories.

Some of these sampling methods may be biased. As a rule, electoral registers only list people who are aged 18 years and over, and have the nationality of the country. As mentioned before, telephone ownership may be biased towards groups with higher socioeconomic status. Although address and postal files mostly contain all of the buildings in a country, they are also biased because they exclude those not living in private households, such as homeless people and residents in institutions. Furthermore, when only one person in the household is interviewed, address/postal files and telephone directories do not provide an efficient sample of persons, because the response has to be weighted by household size.[1] Population registers can be used as sampling frames in countries where they exist and where they are available as public records for sampling purposes. Population registers seem to be nearly complete in some countries, but alterations such as changes of

[1] To obtain a representative sample one should ideally draw the sample from a population register. If this is not possible, one can use address, postal or telephone registers. These, however, have the disadvantage that not every person has the same chance of being selected: if one person per household is selected, those in households with only one member have a greater chance of being selected than those in households with more members. A weighting factor inversely proportional to the chance of being selected is therefore used. This is also necessary if more than one member (but not all) of the household are interviewed, though in that case the advantage of interviewing (nearly) all members of a single household outweighs the disadvantage of unequal chance.

address may only be entered slowly, resulting in registers that are not fully up-to-date. The strategy of generating a sample may involve several stages; two or even three stages are often employed. In the Netherlands, for instance, a two-stage address sample is used. First a sample of municipalities is drawn, which always includes all the large municipalities and in which the smaller municipalities have the probability of being included in proportion to their number of inhabitants. Then in each municipality a number of addresses is selected at random. An advantage of this method is that it limits the travel time of interviewers.

### Unit for Sampling and Analysis

Timely results are likely to be of high priority, and thus a simple design having a single unit of analysis – the individual – would be sensible. The sample of individuals would often still be chosen from a sample of addresses/households. In fact, including all residents at an address/household is a necessary economy because of the clustering of individuals for interviewing purposes without introducing large biases. For this reason the household or address approach is preferred for health interview surveys. A household approach is also desirable because the use of health services is associated with household characteristics, and some socioeconomic variables of economically non-active household members, i.e. non-working adults and children, are determined by the head of the household and/or working members.

Although data analysis is primarily done at the individual level, more complex analyses could be carried out at a later stage using the household identifiers available in the database.

### Size

The final decision about sample size will depend on the detail of results required; the finer the detail the greater the sample size needed to provide estimates with acceptable confidence limits. The extent of detail is, *inter alia*, defined by the need to produce separate data for smaller geographical and/or administrative areas within a country and the need for quarterly data. Such details may be required for administrative and planning purposes.

There are several strategies that can be employed to maximize the value obtained from a sample. These are mainly applicable to continuous surveys. One is to combine the data for two or three years to achieve the required sample size at the smallest geographical level, while retaining annual data at the largest level. This can also be used to produce separate data for small groups defined by socioeconomic or ethnic criteria. Another, more complicated strategy is to have a rotating sample of lower order areas so that data are produced at less frequent intervals than higher level data.

It is also possible to introduce a panel element into the design so that cheaper (e.g. telephone or postal) methods could be used in subsequent rounds of interviewing when only updating of information was required. This allows some longitudinal analysis to be carried out, as well as producing sample benefits that allow more precise measurement of change. However, although longitudinal surveys are relevant for some purposes, they may be less appropriate for monitoring trends over time at the population level. Since the latter is the main interest for health for all indicators, this book primarily relates to cross-sectional surveys.

## Collection Period

The period of data collection refers to the period(s) within a year in which the fieldwork takes place. When there are seasonal influences on topics that are included in the health interview survey, the interviews should be spread as evenly as possible across weekdays throughout the year. If this is not possible, data should be used and interpreted with caution and/or corrections should be made to avoid bias because of seasonal differences. An alternative is to limit the data collection to one – the most "normal" – period.

Seasonal influences on use of health care resources and temporary disability are well known but for other health indicators, such as perceived health, no seasonal effect could be found *(34)*.

## Continuous or Repeated Surveys

Although a one-off health interview survey can provide relevant data, some regularity – continuous or repeated – in assessment is usually

needed, in particular in relation to the monitoring of the health situation. However, it may not be cost-effective to carry out special surveys for specific groups on a continuous basis. In such cases it is more likely that series of comparable surveys would be planned several years apart. Continuous surveys are also not usually necessary for international comparisons of health data. For the monitoring of the health for all targets, for instance, data have to be updated every three years. Consequently, a repeated survey with an interval of three years would suffice, although this frequency may be seen as a minimum requirement.

In planning for any large national general population survey, the costs and benefits of a continuous or regularly repeated survey should be carefully considered. It is unlikely that large movements in the variables of interest will be observed from year to year. But for any large survey, the design and start-up costs will be great because large numbers of interviewers and other staff have to be recruited and trained. For this reason continuous surveys may be more cost-effective than repeated surveys, even for measuring information on topics for which year-to-year data are not strictly necessary. One option would be to have a continuous survey, with core questions asked each year and with a rotating element containing other items at regular intervals in turn. Every element in the design of an interview survey has its price. For a comprehensive overview of the balance between quality of survey data and survey costs see, for example, Groves *(28)*.

### Institutionalized Populations

In health interview surveys it is common to exclude all non-private households. This means that people living in nursing homes, hospitals, prisons, hostels and other places, such as some types of student and nurses' accommodation, are excluded from the sample. Although they only make up a small proportion of the total population, from a health point of view these people may be very different from people in private households, particularly as regards specific health problems such as dementia and long-term disability. Apart from giving biased data at the national level, their exclusion may also limit the international comparability of certain health data when there are considerable differences in the size and definition of the institutionalized population between countries. The main difficulty of including non-private households in health interview surveys is finding a comprehensive frame from which

to sample. Furthermore, not all instruments that are commonly used in health surveys of people living in private households may be suitable for surveys of those living in institutions.

In general, it is recommended that people living outside private households should be included in health interview surveys where possible, either as part of the general survey or separately. Special attention will need to be given to the way these population groups are defined. There are two main groups:

- those who live in some kind of non-private accommodation such as hospitals, hostels, homes for the elderly, prisons and monasteries; and

- those who are homeless and will not be sampled from the private or the non-private household sector.

For the second group, an overview of sampling possibilities will be required.

### Children

In health interview surveys it is very common to use separate questionnaires for children (such as those under 16 years), for which a parent is usually the informant. For some, but not all, of the recommended instruments presented in the next chapter explicit age restrictions are given. International agreement is needed with respect to the age that distinguishes an adult from a child, and on the specific instruments that are suitable for children. An example of such a specific instrument is the assessment of physical disability in children described by Gorter *(41)*.

Although interviews about small children can only be carried out by proxy, it is sometimes necessary to question children themselves. When children are to be questioned about topics like smoking and drinking, survey methods need to be developed that allow children to be honest: a non-threatening, confidential environment is needed, and children should not be encouraged to exaggerate. For surveys on such sensitive topics, self-completion and computer-assisted methods have great advantages – at least for children who are at or above the age when almost all are literate.

Several important indicators relating to health and nutrition in children of up to approximately four years of age can only be obtained from their mothers. For this specific age group, only very small numbers would be found even in large samples of the general population. In continuous surveys, this problem can be solved by combining the data from several years. In other cases it may be necessary to mount special surveys, using birth registrations or other administrative sources as sampling frames.

The methodology of health interview surveys in the younger age groups is a topic that has not yet been discussed in detail in the consultations; further sharing of experience and research are needed.

## Non-response

Non-response can be defined as the failure to obtain observations on some elements selected and designated for the sample. Sources for non-response include people not at home, refusals, people incapable of answering or unable to answer, and people not found (mailed surveys). Several methods can be used to reduce the percentage of non-response: a guarantee of anonymity, increasing the motivation to cooperate, advance notice to the respondent, and calling back.

Missing data in parts of the questionnaire can result from "don't know" answers in interviews or from self-administered questionnaires that are not completely filled in. Non-response in itself does not have to be a problem; selective non-response, however, is definitely a source of error. Selective non-response refers to the situation where this is associated with certain health characteristics, and will therefore result in biased prevalence rates. For more information on non-response, see for example Groves *(28)*.

Differences in response rates between countries can be due to variation in the definitions applied, or to differences in sample and survey design, fieldwork organization and respondent characteristics *(42)*. Statisticians working in the field of household surveys have organized international workshops in order to exchange information and experience, and to come to international agreements with respect to non-response research, comparability of non-response rates, and methods to reduce and correct for non-response *(43)*.

## DATA PROCESSING AND PRESENTATION

When survey data are collected by means of paper forms, completed questionnaires often have to undergo extensive processing before data can be presented. For the processing, which involves data entry, data editing, weighting adjustment, tabulation and analysis, the use of computers is essential. All these procedures are needed to produce high quality statistics in a clearly structured presentation.

Data processing starts with **data entry**. For most questions in a health interview survey the answers are precoded and the entry is a very straightforward procedure. The coding of open-ended questions, however, of which questions on occupation are a typical example, is a time-consuming job and should usually be carried out by experienced subject-matter specialists to avoid incorrect interpretations of the responses.

In the second step, **data editing**, traceable errors are removed. Three types of error are usually distinguished. A *range error* occurs if a given answer is outside the valid set of answers, e.g. an age of 348 years. A *consistency error* indicates an inconsistency in the answers to a set of questions, e.g. a person with an age of six years and a marital status of "married". Third, there is the *routing error*, which occurs when the interviewer or respondent fails to follow the specified skip instructions in the questionnaire. Where possible, traced errors should be corrected, but in some cases this can be very difficult without contacting the respondents again for clarification. As the latter is usually not possible, the incorrect value in such cases is normally replaced by a special code indicating the value "unknown".

Once a "clean" file without traceable errors has been produced, a **weighting adjustment** is usually made to correct for non-response and unequal selection probabilities in the surveyed population. In the Netherlands, for instance, health interview survey data are first weighted by a factor that is inversely proportional to the chance of the particular respondent being selected. Second, the response is weighted by age, sex, marital status and a combination of province and degree of urbanization, in such a way that the weighted sample distribution reflects the known distribution of these characteristics in the population. Because the weighting procedures used can differ between countries, it is relevant to encourage the exchange of experience in this field.

Finally, a clean data file is ready for **analysis**, of which the first step is tabulation of the basic characteristics. However, the construction of tables is not always as easy as it may look at first sight: the composition of rows and columns, the quantities displayed in cells (counts, means, percentages), the way in which percentages are computed, treatment of multiple-response variables, etc. may often be difficult. For health for all monitoring, data can usually be presented in simple tabulations. Health for all indicators are presented in different ways, e.g. by giving the distribution of answers (for example, for perceived health) or by presenting prevalence rates of certain health characteristics (for example, chronic conditions). For certain specific indices that are to be derived from several items, some data manipulation is often necessary. In general, data should be presented for the whole population and disaggregated by sex and by age (< 25, 25–44, 45–64, ≥ 65 years) or standardized by age (for international standard populations see Waterhouse et al. *(44)*). In addition, differentiation by socioeconomic group, geographical area, etc. is often relevant.

A recent development is the use of microcomputers in the data collection phase. This first occurred in telephone interviewing (computer-assisted telephone interviewing, CATI), and in the last decade the advent of small laptop computers has made it possible for interviewers to take the computer with them to the homes of the respondents. This method, computer-assisted personal interviewing (CAPI), has many advantages: the interviewer is no longer burdened with routing technicalities; errors can be detected and solved during the interview; and data are already entered in the computer during the interview, making a separate data entry and cleaning phase superfluous. For processing self-administered questionnaires, computer-assisted data input (CADI) programs have been developed. A CADI program is an intelligent and interactive system for entry and editing of data collected by means of paper questionnaire forms.

Statistics Netherlands has developed an integrated system for survey processing (the Blaise System) that on the one hand automatically generates computer programs for CATI, CAPI or CADI, and on the other hand interfaces for other data processing software, such as for tabulation and analysis. In such an integrated system repeated data specification is no longer necessary, and consistency is enforced in all data processing steps *(45)*.

## CONCLUDING REMARKS

In this chapter a range of methodological issues that need to be addressed in health interview surveys has been mentioned. Attention has also been paid to areas where there may be difficulties in ensuring comparability between countries. The issues have been discussed under three headings, but it is clear that these cannot be separated. When planning health surveys it is necessary to think about all aspects of data collection, sample design and data processing together.

Although there was general agreement in the consultations with regard to these methodological issues, it was also realized that countries would have to adapt the basic methodological principles to their own situation and resources.

One of the areas that has not yet been discussed is that of statistical analysis. Differences in the methods used may affect comparability between countries, and an exchange of view is needed. Other topics that are important for future international cooperation are age standardization, weighting for non-response, assessment of children, methods of including information on the institutionalized population, the combined use of health interview and health examination surveys, and computer-assisted interviewing.

4

# Common Instruments for Health for All Indicators

For many of the health for all indicators for which population surveys are relevant (see Chapter 1) common instruments were recommended during the three consultations. The recommended instruments are presented in full in this chapter, illustrating how the information for these health and health-related indicators can be collected.

The term "instrument" refers here to a set of questions (or one question) that measures an indicator. Monitoring progress towards a target is realized by measuring one or more indicators at different points in time, using specific instruments. Various measurement methods may be used for an instrument, such as face-to-face interviews and self-completed questionnaires.

In the section on recommended instruments below, the background and recommended instrument of 11 health for all indicators are described. In the section on indicators for which recommended instruments are not yet available (see page 95) the measurement of four health indicators for which no common instrument could be recommended as yet is discussed. The information presented in this chapter is based on the working papers (see Annex 2) and the proceedings of the three consultations, supplemented with relevant information from the more recent literature. For each indicator, some background information and the rationale for the choice of the recommended instrument are provided. The recommended instrument is then presented, followed by some suggestions on the processing and presentation of the

results. With respect to the presentation, it should be noted here that for the disaggregation of data by age in health for all monitoring WHO uses the age groups < 25, 25–44, 45–64 and ≥ 65 years. For the first age category, it seems practical for countries to present data for at least those aged 18–24 years, as most surveys include this age group; data can also be presented for younger age groups, when available.

The collection of information for health indicators in national health interview surveys makes some specific demands on the instruments to be used. Ideally, instruments should:

- be as short as possible;
- not be biased by the age or sex of the respondent, or by differences in culture, language, socioeconomic status, etc.;
- be suitable for face-to-face interviews (preferably) and/or self-administered questionnaires and, for the former, suitable for administration by interviewers without special (medical) education;
- preferably be suitable for proxy response;
- collect information on (health) characteristics that are not too rare in the target population; and
- be simple to administer, and provide data that are easy to process (for example, the number of open-ended questions should be kept to a minimum).

To maximize the willingness of countries to implement the recommended instruments in their health interview surveys, the instruments should build on the experience that already exists.

The choice of the recommended instruments was at least directed by these requirements. Most of them consist of one or just a few questions with fixed response categories, and collection time rarely exceeds a few minutes. Most instruments can be used in face-to-face interviews as well as in self-administered questionnaires, and do not need special, highly educated interviewers. In most cases proxy response is possible and, with some exceptions there are no restrictions on respondent characteristics. Any exceptions are fully described.

The reliability and validity of information obtained by health interview surveys is partly influenced by the general methodology of the survey – as discussed in Chapter 3 – and partly by the instruments that are included in the survey. For many of the recommended instruments described in this chapter, no published information is yet available on reliability and validity. However, their use in health interview surveys is recommended, with the expectation that comparison of outcome data and evaluation of experience will ultimately lead to the formulation of standard instruments (see Chapter 5).

## RECOMMENDED INSTRUMENTS

### Perceived Health

*Background*

For the evaluation of progress towards health for all, and for a better understanding of the population's own assessment of such progress, it is essential to measure the health perception of the population. Perceived health is one of the principal indicators (indicator 2.2) for monitoring the health and quality of life of the population as expressed in target 2 of the health for all strategy of the European Region of WHO.

A simple question on the self-perception of health status in general terms is one of the most commonly used in health interview surveys. Despite its very general, seemingly subjective character, such a question appears to be very useful as a public health indicator. The assessment of perceived health is associated with a number of other health measures *(34)* and the use of health services *(46)* and it also appears to be an independent predictor of survival rate in elderly people *(47)*.

Examples of questions for the measurement of perceived health are:

- How is your health in general?
- How good do you consider your present state of health?
- How would you judge your health condition compared to other people of your age?

The wording of questions on perceived health must be chosen with care. For example, the use of a comparison with "people of your own

age" is not recommended; it may not measure progress of the "average" state of health in the population, since respondents are in fact invited to refer to the average. The "present state of health" is also considered inappropriate, since short-term disturbances should ideally not influence answers to the question. It is therefore recommended that the question should refer to "health in general".

Careful consideration must also be given to the number and type of response categories to be used. For example, rating scales ranging from 1 to 10 or from A to E are not suitable for international comparisons because they have different meanings in different cultures. It is recommended that five verbally indicated categories be used, in which common terms such as "good" and "bad" are presented.

*Instrument*

**Perceived health**

How is your health in general?

- Very good
- Good
- Fair
- Bad
- Very bad

The interviewer should first wait for a spontaneous answer. If this does not fit one of the categories, then these should be given to the respondent explicitly.

*Presentation of data*

Data on health for all indicator 2.2 on perceived health can be presented by giving the distribution of all categories, for the whole population and by sex and age. One alternative is to express the data as the percentage of the population with very good and good health.

*Comments*

The use of a separate instrument for the measurement of perceived health in relation to mental health status is not recommended, given the

supposition that mental health aspects are embodied in the recommended general question. In other words, a respondent with a mental disorder will in general perceive his or her own health as less good compared to respondents without mental health disorders. This assumption should be investigated further.

The order in which questions are asked in the survey may influence the results. It would, for example, be difficult to ask a question on general health status after a person had gone into details of major illnesses and disabilities *(29)*. It is recommended that the general question on perceived health is asked at the beginning of the interview.

A showcard may be used to present the response categories to the respondent. A study in the Netherlands *(48)* did not find a methodological effect: there were no differences in outcome whether or not a showcard was used.

## Temporary Disability

*Background*

For the monitoring of health for all target 4, which aims at a sustained and continuing reduction in morbidity and disability, several indicators are needed. For the measurement of disability, a distinction is made between long-term disability (indicator 4.2), which is described below, and temporary disability (indicator 4.1). Temporary disability refers to temporary restriction in an individual's usual level of functioning. Information on temporary disability is usually obtained by a question about days of restricted activity and bed-days, which is commonly used in health interview surveys. Measurement of that period of time, together with some notion of the severity of the disability, can provide information on the time lost to ill health in the society. However, if functioning has been impaired for a very long period of time, measurement of disability in relation to time may be meaningless. It is then important to measure disability in relation to some minimum level of functioning *(49)* (see the section on long-term disability below).

Differences in the wording of the question on restricted activity in various surveys include differences in the reference period (usually 14 days), whether the period is mentioned precisely (for example naming weekdays and day of the month), whether the nature of specific activities is mentioned (such as housekeeping, going to school

or free-time activities) and the way reference is made to the cause (health in general, symptoms, illness, injury or more specific). The recommended instrument uses a slightly modified version of the well known questions on temporary disability used by the Organisation for Economic Co-operation and Development (OECD), which includes the two-week reference period. It is generally concluded by researchers that two weeks is the maximum recall period, in order to avoid loss of memory for reporting minor events such as the restriction of activity *(49)*.

*Instrument*

**Temporary disability**

Think about the two weeks ending yesterday. Have you cut down on any of the things you usually do about the house, at work or in your free time because of illness or injury?

- Yes (ask questions *a* and *b*)
- No

(*a*) How many days was this in all during these two weeks, including Saturdays and Sundays? (01–14)

(*b*) On how many of these days were you in bed for all or most of the day? (00–14)

It is recommended that the same question is used for the specific measurement of temporary disability because of *mental health conditions*, but with the phrase "illness or injury" replaced by "an emotional or mental health problem".

The question on temporary disability is not relevant for infants of one year and younger because they spend most of their time sleeping or lying down. In the case of children, the response of a parent may reflect more accurately the level of restriction of activity, so that proxy responses are acceptable for all children of 1–15 years of age *(49)*.

*Presentation of data*

The average "number of days of temporary disability per person per year, by age and sex" (health for all indicator 4.1) should be calculated by

multiplying individual responses on the two-week recall period by 26, summing them, and dividing the result by the number of respondents in the relevant population group. This can be done both for days of restricted activity and for bed-days, the latter representing more severe temporary disability.

*Comments*

The temporary disability indicator may be subject to seasonal variation, which will create problems if the survey is carried out at one particular time of the year. Ideally, a health survey should cover all months of the year; if this is not possible adjustments will need to be made.

A limitation of the instrument is that it can only be used to calculate a global rate for the population and for population groups. Individual respondents cannot be categorized into broad groupings such as "none or a few days of restricted activity", "some days", etc., because a person's two-week experience does not represent his or her annual experience.

Furthermore, this instrument does not make a strongly marked difference between short-term and long-term disability though, in theory, temporary disability should refer only to deviation from an individual's usual level of functioning, even if this usual level is already reduced. In practice, however, the question on temporary disability may also partly assess long-term disability. Nevertheless, the joint use of the indicators on disability is important because both temporary and long-term disability are relevant for public health purposes.

## Long-term Disability (Physical)

*Background*

Because of changes in public health in relation to chronic diseases and the aging of the population, information on long-term disability has become an important aspect of public health. The level of long-term disability, defined as long-term limitations in major activities in daily life, is an indicator (4.2) for health for all target 4 concerning the reduction of chronic disease and disability. Monitoring the level of long-term disability in a population is also important in the context of the health for all target to promote the quality of life (target 2) and for the evaluation of programmes that create better opportunities for people with disabilities (target 3). Furthermore, long-term disability is a relevant indicator for health for all target 6, which addresses healthy

aging. As morbidity in the elderly is often characterized by multiple pathology, nonspecific presentation and a high incidence of complications of disease and treatment, long-term disability is useful as an overall indicator of restrictions following the disease.

Since the 1960s, a large number of instruments have been developed for the assessment of long-term disability *(50,51)*. These instruments are mostly used for measuring disability in the elderly. In 1980 a classification for the consequences of diseases was introduced: the International Classification of Impairments, Disabilities, and Handicaps (ICIDH) *(21)*. The ICIDH is a basic conceptual scheme, which has been used as a guide for the further development of instruments, specifically for instruments on disability.

Most instruments on disability consist of a set of questions on the performance of activities in the field of mobility, personal care and communication. OECD was the first organization to introduce an instrument for international use that addresses these areas *(49)*. The recommended instrument, which also follows these broad areas of performance, is based on an extensive disability questionnaire consistent with the concepts of ICIDH and developed by the British Office of Population Censuses and Surveys *(40)*. This questionnaire assesses different severity levels of disability within each of the disability areas covered in ICIDH.

For the recommended instrument, it was agreed that the priority areas for measurement are: locomotion, self-care, continence, hearing and vision. Self-care disabilities include dressing, washing, feeding and using the toilet. In these priority areas, the choice of specific questions (i.e. the specific activities) was determined by the severity of the limitation in performance of these activities, measured on a scale from 0 to 15 *(40)*. A "lower" level of disability was defined by a severity of between 2 and 4, and a "higher" level was defined by a severity of between 8 and 10. Following these definitions, the prevalence of lower levels of disability was estimated to be around 11% for the British adult population in 1985–1988, and the prevalence of higher levels was around 5%.

The recommended questionnaire contains ten questions on disability and three on mobility. Following the recommendation of Council of Europe experts, three questions on other areas of disability can be added *(24)*; these questions are optional.

*Instrument*

**Long-term disability**

*The following questions refer to what you are normally capable of doing. Temporary complaints should be ignored.*

**Handicap items** (with reference to ICIDH codes)

| | |
|---|---|
| Mobility<br>H3 | 1. Are you permanently confined to bed even though there may be help to get you up?<br>2. Do you sit in a chair (not a wheelchair) all day even though there may be help for you to walk?<br>3. Are you confined to your house/flat and garden? |

| **Disability items** (with reference to ICIDH codes) | | *Severity level* |
|---|---|---|
| 1. Locomotion<br>D40 | What is the furthest you can walk on your own without stopping and without severe discomfort? | |
| | – Only a few steps | Higher |
| | – More than a few steps but less than 200 metres | Lower |
| | – 200 metres or more | No disability |
| 2. Transfer<br>D46.0 | Can you get in and out of bed on your own? | |
| | – Without difficulty | No disability |
| | – With some difficulty | Lower |
| | – Or can you only get in and out of bed with someone to help you | Higher |
| 3. Transfer<br>D46.1 | Can you get in and out of a chair on your own? | |
| | – Without difficulty | No disability |
| | – With some difficulty | Lower |
| | – Or can you only get in and out of a chair with someone to help you | Higher |
| 4. Dressing<br>D35–D36 | Can you dress and undress yourself on your own? | |
| | – Without difficulty | No disability |
| | – With some difficulty | Lower |
| | – Or can you only dress and undress yourself with someone to help you | Higher |
| 5. Washing<br>D34.0 + D34.2 | Can you wash your hands and face on your own? | |
| | – Without difficulty | No disability |
| | – With some difficulty | Lower |
| | – Or can you only wash your hands and face with someone to help you | Higher |
| 6. Feeding<br>D37 + D38 | Can you feed yourself, including cutting up food? | |
| | – Without difficulty | No disability |
| | – With some difficulty | Lower |
| | – Or can you only feed yourself with someone to help you | Higher |



BEST COPY AVAILABLE

| | | | |
|---|---|---|---|
| 7. | Toilet<br>D32.0 +<br>D32.2 | Can you get to and use the toilet on your own?<br>– Without difficulty<br>– With some difficulty<br>– Or can you only get to and use the toilet with someone to help you | <br>No disability<br>Lower<br><br>Higher |
| 8. | Continence<br>D30 + D31<br>(+191) | Do you ever lose control of your bladder?<br>– No<br><br>*If yes:*<br>Do you lose control of your bladder:<br>– at least once a week<br>– less than once a week but at least once a month<br>– less than once a month | <br>No disability<br><br><br>Higher<br><br>Lower<br>No disability |
| 9. | Hearing<br>D23 | Is your hearing good enough (with a hearing aid, if necessary) to follow a TV programme at a volume others find acceptable?<br>– Yes<br><br>*If no:*<br>Can you follow a TV programme with the volume turned up (with a hearing aid if necessary)?<br>– Yes<br>– No | <br><br><br>No disability<br><br><br><br>Lower<br>Higher |
| 10. | Seeing<br>D26 | Can you see well enough (with glasses or contact lenses, if necessary) to recognize a friend at a distance of four metres (across a road)?<br>– Yes<br><br>*If no*<br>Can you see well enough (with glasses or contact lenses, if necessary) to recognize a friend at a distance of one metre (at arm's length)?<br>– Yes<br>– No | <br><br><br>No disability<br><br><br><br>Lower<br>Higher |

**Optional disability items**

| | | | |
|---|---|---|---|
| 1. | Stairs<br>D42 | Can you walk up and down a flight of 12 stairs without resting?<br>– Yes<br><br>*If no:*<br>Can you do this if you hold on and take rests?<br>– Yes<br>– No | <br><br>No disability<br><br><br><br>Lower<br>Higher |
| 2. | Retrieval<br>D52 | Can you (when standing) bend down and pick up a shoe from the floor?<br>– Yes<br>– No | <br><br>No disability<br>Lower |
| 3. | Speaking<br>D21 | Can you speak without difficulty?<br>– Yes<br>– No | <br><br>No disability<br>Lower |

The instrument is not suitable for young children; it is usually administered to persons aged 16 years and older.

*Presentation of data*

For calculating the percentage of the population experiencing different levels of long-term disability by age and sex (health for all indicator 4.2) different aggregation levels are possible. For some purposes the results per question are necessary, for example, for the prevalence of hearing problems. For other purposes summary scores are necessary. Two recommended summary scores (of very high aggregation level) are the handicap and disability scores.

*Handicap score*

It is recommended that the three handicap items should be scored as follows.

| | | |
|---|---|---|
| Confined to bed | No = 0 | Yes = 3 |
| Confined to chair | No = 0 | Yes = 2 |
| Confined to house/flat | No = 0 | Yes = 1 |

The summary score for handicap is the highest of the three values assigned to the person, and takes a value in the range 0–3.

*Disability score*

Each of the 10 disability items in the instrument is scored on a three-point scale:

| | |
|---|---|
| No disability | 0 |
| Lower | 1 |
| Higher | 2 |

The summary score for disability is the highest value assigned for any of the 10 items, and takes a value in the range 0–2. This 10-item summary score is the minimum recommended score that should be calculated. If the three optional items are included, a 13-item summary score can also be used.

On the basis of these summary scores, the percentages of the population with lower and higher levels of disability can be presented.

It should be noted that these summary scores do not express the total number of disabilities. Alternative summary scores are, for example, summary score per area of disability (e.g. personal care, communication), and the number of disabilities of a certain severity level.

The recommended instrument can also be used for identifying disabled persons for health for all indicator 3.2 (percentage of disabled persons of working age engaged in regular occupational activities); for assessing the current employment and occupational status for this indicator, see the section on socioeconomic classification beginning on page 87.

*Comments*

In theory, indicators of the consequences of diseases are independent of the underlying cause, but the usual disability indicators do not specifically relate to the primary consequences of mental health disorders. In order to measure long-term disability resulting from such conditions, a separate indicator should be considered (see page 98).

## Disability-free Life Expectancy

*Background*

The classic public health indicator is mortality, which is often expressed as life expectancy. With the introduction of other public health indicators, such as chronic disease and disability, the need for summary indicators has arisen. The term healthy life expectancy or health expectancy refers to an indicator that combines population data on mortality with other health indicators such as disability, perceived health, presence or absence of chronic illness, or a specific chronic condition like dementia. This indicator is interpreted as the average years lived without health problems, defined by the variables included. Scientific efforts in the last few years have focused on the development of a series of measures of healthy life expectancy, based on different health indicators and severity levels. The calculation of disability-free life expectancy (DFLE), which is a special case of health expectancy, is recommended as a minimum (health for all indicator 4.5).

DFLE is defined as the average years lived without disability, and is considered to be an attractive solution for measuring the achievement of one of the main objectives of the health for all strategy and of health systems today, which is to add life to years and not just years to life. In the health for all context, DFLE is important for the monitoring of health for all targets that aim at reducing chronic disease and disability (target 4) and at promoting health and quality of life (target 2) and healthy aging (target 6).

The idea of an aggregated index, taking into account both mortality and disability, was first described by Sanders in 1964 *(52)*. Since then a considerable amount of methodological research has been undertaken, especially within the international research network REVES *(53)*. There are two main considerations in respect of DFLE: the choice of calculation method, and the nature of the disability data that are used.

When the separate collection of mortality data (from vital statistics) and disability data (from health interview surveys) is taken as a starting point, Sullivan's method of calculation is recommended. This method, first described in 1971 *(54)*, uses the observed prevalence of disability at each age within the present population, in order to divide the years lived at different ages into years with and without disability. Basic cross-sectional surveys are sufficient to collect information on the observed prevalence of disability within the population. Other more advanced calculation methods, such as the double decrement life-table method or the multistate life-table method, demand more sophisticated data on disability, derived from longitudinal studies.

When cross-sectional health interview surveys are used for the collection of the data on disability, the following should be considered.

1. Sullivan's method uses the observed age-specific prevalences of health states in a population at a given point in time to calculate the years of life lived in the various health states at each age by a period life table cohort. The observed prevalence rates used depend not only on current health conditions, but also on the earlier health conditions of each age cohort, i.e. incidence, recovery and health state-specific mortality related to earlier times (or ages) *(55)*. For this reason, it has been argued that the use of Sullivan's method does not permit true comparisons over time *(56)*. However, a recent simulation study has

shown that, although Sullivan's method is not capable of detecting a sudden change in disability transition rates, it provides a good estimate of the true period value if there are smooth and relatively regular changes over a long period of time *(57)*.

2. In general, health interview surveys exclude people living in institutions such as nursing homes. Because a substantial part of the institutionalized population is disabled, underestimation of the age-related prevalence of disability will occur when these rates are based only on survey data. It is therefore necessary to estimate the proportion of the population that lives in institutions in order to adjust the rates appropriately. For the adjustment, "living in an institution" can itself be seen as a disability (inability to live in a normal home); alternatively, and more specifically, prevalence rates of institutional disability can be used, which can be derived from the admission and discharge figures of various types of institution. There are limitations to both these approaches, since definitions of institutions vary from one country to another, and the disability data resulting from population surveys and from registers of institutions are seldom based on the same instruments.

3. Disability data obtained by health interview surveys are completely defined by the instrument used. Where possible, disability should be measured on the basis of the instruments for temporary and long-term disability, as described in the sections on temporary disability (see page 53) and long-term disability (physical) (see page 55). Different cut-off points for disability can be used, but for all choices it is important to describe in detail which disabilities (and of what severity) are included.

4. The measurement of mental health disorders in health interview surveys is not common. For the calculation of DFLE, however, it is valuable to have a specific measure of disabilities related to such disorders (see the section on long-term disability (mental/social), page 98).

*Calculation procedure*

The recommended calculation procedure is Sullivan's method. It is based on the linkage of data on mortality (from vital statistics),

institutionalization (e.g. from census) and disability (from health interview surveys) and involves the subtraction of the number of years lived with disability from the number of years lived by a theoretical cohort under the mortality conditions of the current year. The sum of years lived free of disability, reported for the initial number of people in the cohort, represents the value of disability-free life expectancy. An example of this calculation method, which is derived from Robine *(58)*, is described below. For simplicity, the adjustment of disability rates with data on the institutionalized population has been excluded *(59)*.

From the number of survivors (column b) in a life table (Table 4) the number of years of life between each age is calculated (column c). Prevalence of disability (column d) is then used to calculate the number of years lived with disability (column e). By deducting these years from the number of years lived between each age (column c) the number of years lived without disability is obtained (column f). The cumulative total of these years is then computed from any given age x (column a) and related to the total number of survivors at that age (column b) to obtain DFLE at age x (column g).

The total number of years without disability from the age of 65 upwards is thus 1 087 653. This total is divided by the number of

**Table 4. Disability-free life expectancy (years) for males, Upper Normandy, 1979 (Sullivan's method)**

| Age x | Survivors | Years lived between x and x + 5 | Prevalence of disability between x and x + 5 | Years lived with disability between x and x + 5 | Years lived without disability between x and x + 5 | DFLE from x |
|---|---|---|---|---|---|---|
| (a) | (b) | (c) | (d) | (e) | (f) | (g) |
| 65 | 100 000 | 463 715 | 0.078 | 36 170 | 427 545 | 10.9 |
| 70 | 85 486 | 376 533 | 0.137 | 51 585 | 324 948 | 7.7 |
| 75 | 65 127 | 266 085 | 0.243 | 64 659 | 201 426 | 5.1 |
| 80 | 41 307 | 147 690 | 0.310 | 45 784 | 101 906 | 3.2 |
| 85 | 17 769 | 59 025 | 0.615 | 36 300 | 22 725 | 1.8 |
| 90 | 5 841 | 19 043 | 0.522 | 9 940 | 9 103 | 1.6 |

*Source*: Colvez *(60)*.

survivors aged 65 to estimate the DFLE for males at age 65 in Upper Normandy in 1979: 1 087 653 divided by 100 000 (column b), i.e. 10.9 years (column g). From the age of 70 upwards the total number of years without disability is 660 108. This total is divided by the number of survivors aged 70 to estimate the DFLE at age 70: 660 108 divided by 85 486 (column b), i.e. 7.7 years (column g). The calculations are repeated to complete column g.

*Presentation of data*

Disability-free life expectancy at birth and at ages 1, 15, 45 and 65 years should be presented, for both sexes and for men and women separately.

*Comments*

Many countries have in place a cross-sectional health survey designed to provide regular estimates of the health composition of the population. That is why methods that use survey data, such as the Sullivan method, are and will continue to be popular. In order to produce the most from these existing surveys for calculating healthy life expectancy indices, it is desirable to collect information about health transitions, i.e. changes in individual health status *(61)*. To improve the accuracy of the estimation of health expectancies, it is therefore advisable to conduct annual surveys with a 12-month retrospective question on health status, or two- or three-wave studies with a one- or two-year interval.

Developments are under way in the use and calculation of health expectancy indices, especially for the study of time trends and international comparisons. The international research network REVES is playing an important role in these developments.

One of the first conditions for establishing comparable calculations of healthy life expectancy is the collection by countries of comparable data on health indicators such as disability and perceived health. The efforts made through the consultations to collect these data, as described elsewhere in this chapter, should contribute to the further development of standardized health expectancy measures.

## Chronic Conditions (Mental)

*Background*

Nowadays, chronic diseases such as cancer, cardiovascular diseases, rheumatic disorders and mental health disorders constitute a major public health problem. These diseases are accompanied by pain, suffering, inconvenience and loss of physical capacity, and they are putting pressure on health services and society in general. Reducing the morbidity and disability due to chronic diseases is therefore an important target of the health for all strategy (target 4). Measuring the incidence and prevalence of selected chronic conditions, for all ages and for people aged 65 years and over, by sex (indicator 4.6) is also relevant in the context of healthy aging (target 6).

Chronic conditions can be primarily related to physical health problems or to mental health disorders. This section deals specifically with the assessment of chronic mental conditions; the physical conditions are described on page 95. The measurement of the consequences of mental health problems in terms of long-term disabilities is described in the section on long-term disability (mental/social) on page 98. Of course, mental health aspects are also included in perceived health and temporary disability (see the sections on pages 51 and 53, respectively).

The spectrum of mental health problems ranges from psychological ill health to very severe disorders. It is estimated that at least 5% of the population in the WHO European Region suffer from serious diagnosable mental health disorders (neuroses and functional psychoses), although prevalence estimates vary widely from study to study. It is further estimated that at least an additional 15% of the population suffer from less severe, but potentially incapacitating, forms of mental distress *(62,63)*. These conditions affect social wellbeing and create the risk of more serious mental health problems and life-threatening behaviour such as suicide, violence and substance abuse. Target 12 of the health for all strategy is the reduction of mental health disorders and suicide. The measurement of chronic mental conditions is therefore directly relevant for this target, especially for indicator 12.3 (mental health).

For the measurement of mental health disorders in health interview surveys a selection of mental health disorders has to be made, as it is

not possible to measure all of the more than 120 mental diagnoses that are nowadays distinguished (see the *Diagnostic and statistical manual of mental health disorders* (DSM-III-R) *(64)* and ICD-10 *(20)*. Criteria for selection that are relevant for public health policies are prevalence, severity and duration. On this basis, the following major chronic mental conditions were selected: dementia, mental retardation (both referring to cognitive impairment), anxiety disorders, schizophrenia and affective disorders. As the sample sizes of health interview surveys are generally not large enough to permit calculation of incidence rates, only the prevalence of these conditions can be assessed.

Because the knowledge of respondents about the above-mentioned diagnoses is generally poor, the instruments have to be based on a symptom approach. Such an approach takes a considerable time, as a large number of symptoms have to be checked in order to diagnose a mental disease. To reduce time and expenses it is proposed that, except for dementia, a two-stage procedure is used: screening questions (stage 1) are followed by an extensive interview procedure (stage 2) if the outcome of the screening questions indicates the need for more in-depth measurement. In large samples of the general population the use of two stages is the most efficient procedure for the assessment of mental conditions. A brief description of the recommended instruments for the selected mental conditions is given below. A comprehensive description and classification of many recently developed and commonly used research techniques can be found in Thompson *(65)* and Wetzler *(66)*.

### *Dementia*

During the last few decades dementia, and in particular Alzheimer's disease, has been transformed from an unfamiliar syndrome to a major public health concern. In that period, a great variety of instruments have been developed to measure dementia. Tests that are based on neuropsychological measures seem most suitable for health interview surveys because they are brief, clearly interpretable and relatively easy to administrate. Of these tests, the Iowa dementia test *(67)* is recommended because it is not restricted to a given etiological type of dementia. Another advantage is that this test does not assume formal education or literacy. The test consists of three subtests:

- the *measurement of temporal orientation*, which assesses the accuracy of identification of the month, day of the month, year, day of the week and time of the week;

- the *controlled oral word association test*, or word fluency test, which requires the respondent to produce as many words as possible beginning with a specified letter of the alphabet over a one-minute period; and

- the *Benton visual retention test (MC version)*, which is a measure of visual perception and short-term visual memory for signs.

The assessment should be limited to people of 55 years and older because dementia is hardly ever manifest before the age of 55.

### *Mental retardation*

The IQ test is the standard measure of intelligence and, as such, the standard diagnostic instrument for the assessment of mental retardation. Because the determination of an IQ score takes at least several hours, it is not possible to include such a test in health interview surveys. To assess the prevalence of mental retardation in health interview surveys, a short and easily administered test is needed. It should be noted, however, that such measurement techniques can only be approximations of formal testing. A simple two-stage procedure is recommended for people with lower education (at or below primary school level) and younger than 55 years. People with higher education are not supposed to be mentally retarded, and people of 55 and older are not questioned to avoid confusion with a diagnosis of dementia. The recommended instrument consists of a few screening questions and (for people aged 14–55) the mini-mental state examination *(68)*, which is a measure of cognitive status, or (for children aged 7–13 and illiterate adults) the Benton visual retention test (MC version).

### *Anxiety disorders, schizophrenia and affective disorders*

The most widely used screening technique for detecting mental health disorders in the general population is the General Health Questionnaire (GHQ) *(69)*. The GHQ is especially suitable for detecting affective disorders in health interview surveys. For the assessment of the

selected mental health disorders, the 12-item version (GHQ-12) is recommended as a screening instrument, followed by additional screening questions to detect chronic cases and other forms of psychopathology (two questions) and psychotic disorders (four questions). The second stage involves the actual assessment of anxiety disorders, schizophrenia and affective disorders for those respondents identified as possible cases in the screening procedure. The instrument should cover a variety of psychopathological conditions and provide a diagnosis according to specified criteria. It is recommended that the respective chapters of the Diagnostic Interview Schedule (DIS) *(70)* be used for this purpose. The DIS is based on specific diagnostic criteria of an internationally accepted classification system (DSM-III-R) and is considered to be the only available instrument for large-scale disorder-specific community surveys that is economical and that can also make use of computerized scoring.

*Instruments*

A summary of the recommended instruments for the selected mental health disorders is given in Table 5. The instruments are fully described in Annex 3, with details of source, content, administration and scoring. For all conditions there is a separate procedure when the assessment is based on a proxy informant.

*Presentation of data*

The prevalence of chronic conditions should be presented as the percentage of the population suffering from these conditions, by age and sex.

*Comments*

The recommended instruments for the assessment of mental conditions are based on a symptom approach, which in most cases is time-consuming and requires face-to-face interviews. Although administration can be done by lay interviewers, intensive training is often needed; to learn how to administer the DIS alone, for example, requires training of approximately one week. It is recognized that the inclusion of these instruments makes high demands on the design and duration of health interview surveys. Although mental conditions may be measured in

Table 5. Summary of recommended instruments for some chronic mental conditions[a]

| Condition | Population characteristics | Screening instrument | Diagnostic instrument | Duration |
|---|---|---|---|---|
| Dementia | People ≥ 55 years | No screening questions | Iowa dementia test:<br>(a) measurement of temporal orientation<br>(b) controlled oral word association test<br>(c) Benton visual retention test (MC version) | ± 10 min |
| | | Proxy version:<br>4 questions | A question on already diagnosed dementia or Alzheimer disease by a health professional | < 2 min |
| Mental retardation | People with lower education and < 55 years | 4 questions | Mini-mental state examination (14–55 years)<br>Benton visual retention test (MC version)<br>(7–13 years and illiterate adults) | < 5 min<br>4–5 min |
| | | Proxy version:<br>3 questions | One question about diagnosed mental retardation | < 1 min |
| Selected conditions<br>– anxiety disorders<br>– schizophrenia<br>– affective disorders | People ≥ 19 years | Two-stage screening:<br>GHQ-12 and<br>6 questions | Diagnostic interview schedule (DIS)<br>– anxiety disorders<br>– schizophrenia<br>– affective disorders | 20–30 min |
| | | Proxy version:<br>6 questions | Diagnostic interview schedule (DIS)<br>– anxiety disorders<br>– schizophrenia<br>– affective disorders | 20–30 min |
| | Children of 6–18 years | 6 questions | Adapted version of DIS (DIS-C)<br>or a proxy version for parents (DIS-Parent) | 20–30 min |

[a] For references and addresses see Annex 3.



82
BEST COPY AVAILABLE

health interview surveys, it is preferable to use some of these instruments in specialized studies.

GHQ-12, which is recommended as a screening instrument, can also be used to measure chronic complaints; however, the scoring of the questions should then be adjusted (see Annex 3). Furthermore, GHQ-12 is also recommended for the measurement of emotional wellbeing, which can be seen as a relevant additional indicator for health for all target 12. The scoring of the questions should then probably be adjusted – the scoring for chronic complaints might be used – although further research is needed. As an indicator of emotional wellbeing, GHQ-12 can be commonly included in health interview surveys. This questionnaire has already been translated into 16 languages and different versions (according to the number of items included) have been validated in many countries.

The assessment of psychopathology in health interview surveys is limited because of at least two possible sources of bias. The first is nonrandom refusal because of a mental health disorder that contributes to selective non-response. The second relates to the fact that most health interview surveys do not include the institutionalized population, yet institutional residents are expected to account for a disproportionate share of those with mental health disorders. These problems can cause considerable bias in estimating the prevalence of chronic mental conditions in the population (see also Chapter 4).

The methodology of measuring mental health disorders is currently undergoing intensive development. WHO has proposed several instruments, such as the composite international diagnostic interview (CIDI) *(71)* and the schedules for clinical assessment in neuropsychiatry (SCAN) *(72)*. CIDI and SCAN may be seen as possible alternatives for the DIS recommended here. CIDI was developed only recently, and has therefore not yet been used extensively. SCAN is intended for use by clinicians and is therefore less suitable for large-scale general population surveys.

The instruments recommended in this publication were selected specifically on the grounds of their practical use in collecting information for health for all indicators in large-scale health interview surveys

of the general population. As the area of measuring mental health disorders in health surveys develops further, new and/or other instruments may be considered in the future.

## Smoking

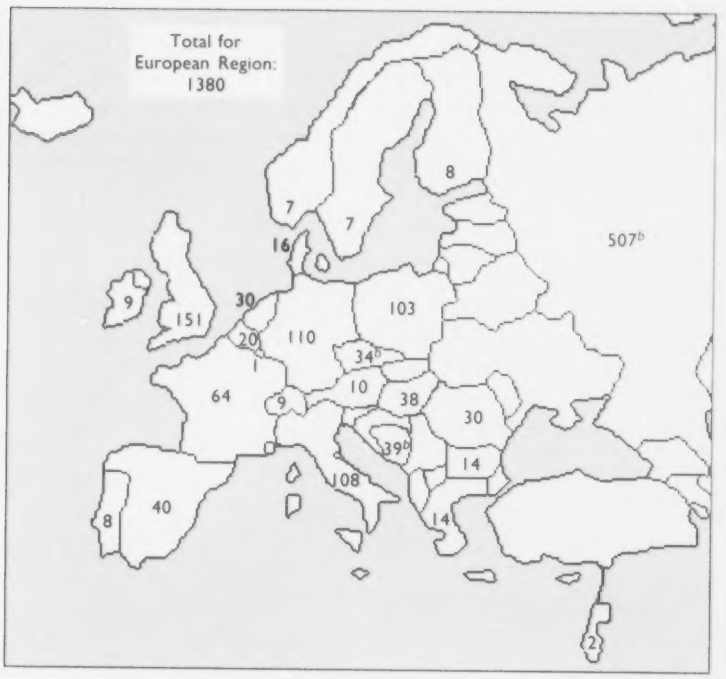
*Background*

Smoking is a major cause of lung cancer, ischaemic heart disease, chronic bronchitis and emphysema *(73,74)*. Furthermore, smoking during pregnancy lowers the birth weight of infants, and exposure to environmental tobacco smoke increases the risk of lung cancer and other respiratory illnesses among nonsmokers *(75,76)*. It is estimated that during 1985, a total of just over 1.1 million deaths in the European Region were due to tobacco *(77)*; in 1995 the figure is expected to be nearly 1.4 million (Fig. 2).

Target 17 of the health for all strategy aims at a significant reduction of the health-damaging consumption of dependence-producing substances such as alcohol, tobacco and psychoactive drugs. With respect to tobacco use, the specific objective is to increase the number of nonsmokers and to protect nonsmokers from involuntary exposure to tobacco smoke.

For the monitoring of smoking patterns in the population (health for all indicator 17.10), information is needed about the proportions of daily smokers, occasional smokers, ex-smokers and those who have never smoked. Further divisions into subgroups can be made according to level of smoking, whether a person has reduced his or her smoking, and how long ago a person stopped smoking. In order to measure all these aspects a simple instrument containing five questions is recommended. This set is regarded as a minimum; of course, more detailed information on smoking behaviour can also be assessed, for example the number of cigarettes and other tobacco products used per day, the total number of years of smoking, and the age at which smoking started. In addition, it may be relevant to measure other aspects of smoking behaviour, such as attempts to stop smoking and opinions on the harmfulness of tobacco *(78)*. Passive smoking can possibly be assessed by asking questions on exposure to tobacco smoke at work and at home *(79)*.

Fig. 2. Predicted annual deaths (in thousands) attributed to tobacco in countries of the European Region in 1995, at ≥ 35 years of age[a]




[a] Adapted from Peto et al. *(77)*.

[b] Estimates for the populations of the former Czechoslovakia, former USSR and former Yugoslavia, respectively.

The designation and the presentation of material on this map of the WHO European Region Member States (as at 31 August 1995) do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities or concerning the delimitation of its frontiers or boundaries.

*Instrument*

**Smoking**

1. Do you smoke?
   - Yes, daily
   - Yes, occasionally (go to question 3)
   - No (go to question 4)

2. How many cigarettes do you usually smoke on average each day?
   - Does not smoke cigarettes
   - Fewer than 20
   - 20 or more [*heavy smoker*]

3. Compared with two years ago would you say you now have reduced smoking?
   - Yes (end)
   - No (end)

4. Have you ever smoked?
   - Yes, daily
   - Yes, occasionally
   - No (end)

5. How long ago did you stop smoking?
   - Less than two years ago
   - Two years ago or more

*Presentation of data*

In accordance with health for all indicator 17.10, the following indices could be produced for the description of smoking patterns in the population (the categories are not exclusive).

The proportion of the population who:

- are daily smokers
  - smoking 20 or more cigarettes per day (heavy smokers)
  - smoking fewer than 20 cigarettes per day
  - not smoking cigarettes (i.e. smoking a pipe or cigars);

- are daily smokers who have reduced smoking in the past two years;

- are occasional smokers;
- are occasional smokers who have reduced smoking in the past two years;
- are nonsmokers;
- are ex-smokers who smoked daily in the past and stopped smoking
  - more than two years ago
  - in the past two years;
- are ex-smokers who smoked occasionally in the past and stopped smoking
  - more than two years ago
  - in the past two years;
- have never smoked.

These data should be given for the total population and disaggregated by age, sex and if possible also by socioeconomic group, geographical area, etc.

*Comments*

The social acceptability of behaviour such as smoking and drinking may vary from one society to another. Smoking is becoming socially less acceptable, especially in countries of western and northern Europe, following the spread of health information on this issue. It is not yet clear whether this shift in opinion has effects on the reliability of data obtained by surveys *(74)*.

The measurement and presentation of smoking behaviour is usually restricted to the population aged 15 years and older. However, a WHO collaborative study on health behaviour in school-age children showed that at the age of 15–16 about one third already smoked at least occasionally, and that one in seven smoked daily in the nine European countries surveyed *(80)*.

Because of the increasing concern about the health-damaging behaviour of children and adolescents, it is important to measure

smoking patterns among these groups. The use of a proxy informant, usually the parent, is not suitable because the parent may not be informed about the smoking behaviour of the child. Asking children about their smoking behaviour usually requires adjustment of the questionnaires that are developed for adults *(74,78)*. The above-mentioned WHO collaborative study has developed a methodology that can be applied in all European countries *(81)* and that complements earlier recommendations *(78)*.

With respect to the item on the reduction of smoking (question 3 of the recommended instrument) there are indications that this may reflect the attitude towards smoking reduction rather than real changes in tobacco consumption *(74)*.

## Physical Activity

*Background*

The contribution of physical fitness and appropriate physical activity to health and wellbeing has become widely acknowledged *(82)*. Physical activity is associated with decreased risks of coronary heart disease *(83)* and it is also likely to be beneficial in relation to colon cancer, stroke, hypertension, diabetes, obesity, osteoporosis and depression *(84,85)*. Regular physical activity is therefore commonly recognized as a health stimulating activity and is an indicator of progress towards the health for all target on the promotion of healthy patterns of living (target 16).

The classification of individuals by activity level is the main objective of measuring physical activity, and enables the study of trends and of associations with other types of behaviour or with health outcomes.

Several instruments have been developed for the measurement of physical activity in health interview surveys. Many are designed to estimate total energy expenditure. However, these instruments are generally not suitable for large-scale health interview surveys. The reasons include practical problems (i.e. the necessity to collect detailed information on type, frequency, duration and intensity of all activities, and for considerable training of interviewers) as well as technical problems (i.e. the requirement of energy expenditure intensity codes for each type of physical activity, and the problem of categorization

into activity levels). Accurate estimates of activity intensity are not yet available. In addition, standardization of activity intensities between different populations, age groups and environmental conditions is extremely difficult. Therefore, even with complex questionnaires, only a gross classification into three different activity categories – light (sedentary), moderate and heavy – is usually possible. These difficulties have advanced the development of less complex questionnaires.

The recommended instrument addresses health for all indicator 16.12 (exercise) and consists of two simple questions: one on the self-assessment of physical activity, derived from the Danish Health Interview Survey, and one on the frequency of exercise-induced sweating *(86)*. These questions are suitable for surveys where energy expenditure values do not have to be produced and where classification of subjects on an ordinal scale is sufficient. The instrument deals only with physical activity patterns in leisure time. Because the occupational physical activity of the majority of the population in the highly mechanized developed countries is generally low, appropriate physical activity is predominantly realized in leisure time.

*Instrument*

**Physical activity**

1. What describes best your leisure time activities during the last year?
   - Hard training and competitive sport more than once a week (*a*)
   - Jogging and other recreational sports or heavy gardening, at least 4 hours a week (*b*)
   - Walking, bicycling or other light activities at least 4 hours a week (*c*)
   - Reading, watching TV or other sedentary activities (*d*)

2. At least once a week do you engage in any regular activity, such as jogging, cycling, etc. long enough to work up sweat?
   - No
   - Yes

   *If yes:*
   How many days per week? ..... days

Questions on occupational and household physical activity can be added to these two questions, but specific questions have not yet been recommended.

If a detailed assessment of physical activity is required, an instrument that measures both total and leisure time energy expenditure should be used. For this purpose, occupational activity should be included in the questionnaire, and long-term patterns should be established using a 12-month reporting period. Self-administered questionnaires are not recommended for this type of activity assessment. The Canada Fitness Survey Questionnaire *(87)* is recommended; it should be adapted to take account of the common types of leisure time activity in different countries.

*Presentation of data*

The results of the first question of the recommended instrument on the self-assessment of physical activity can be presented according to the four answer categories *a*, *b*, *c* and *d*. If the numbers in each category are too small or the purpose of the study requires the use of combined categories, the levels of activity can be presented in three categories: light/sedentary (answer *d*), moderate (answers *b* and *c*) and heavy (answer *a*). A two-level classification is also possible, e.g. inactive (answers *c* and *d*) and active (answers *a* and *b*).

For the second question, on exercise-induced sweating, the following two-level classification has been proposed *(86)*: active ($\geq 3$ days per week) and inactive (0–2 days per week).

The percentages of the population with these levels of activity should be presented by age and sex at least.

Combination of the two questions is possible, but research has indicated that this does not necessarily result in a better classification *(86)*.

*Comments*

The validity of the question on exercise-induced sweating was tested against resting heart rate, skinfold thickness and weekly energy

expenditure in a sample of young adults in the United States. The study demonstrated that it provides a useful indicator of physical activity *(86)*. The question on self-assessment of physical activity has been used in the Danish Health Interview Survey for some years, and is also regarded as a useful measure for leisure time physical activity. Further study is necessary regarding the suitability of the questions for use in health interview surveys of the elderly.

## Birth Weight

*Background*

Birth weight is a commonly used indicator of the nutritional and health status of the newborn. It is considered to be an important determinant of the survival of the infant *(88)* and its ability to develop normally *(89)*. Several factors are associated with low birth weight, such as maternal age, parity, social class, smoking, alcohol consumption and, particularly in developing countries, nutrition *(88)*. In affluent societies, smoking seems to be the most important maternal environmental factor *(90)*. Because of the relation between birth weight and maternal lifestyle, adequate birth weight is one of the indicators (indicator 16.4) of progress towards health for all target 16, which aims at the promotion of positive health behaviour. Improved nutrition, elimination of smoking and the use of alcohol during pregnancy, and proper antenatal services are also relevant in relation to other health for all targets, and hence the prevention of low birth weight may be indicative for these as well.

A low birth weight is commonly defined as one less than 2500 grams. Low-birth-weight infants comprise prematurely born infants and infants who are too small for their gestational age because of retarded fetal growth. Better medical knowledge and improved technology help more children to survive premature birth, but they are at an increased risk of health problems such as infectious diseases. Small-for-date infants may show a tendency towards impaired catch-up growth, and possibly poorer intellectual performance later in life *(89,91)*. Low-birth-weight infants have been found to have more chronic conditions, more days of restricted activity and poorer health status in childhood than infants with a normal birth weight *(92)*. A recent review indicates that babies who are small at birth also have an increased risk of developing cardiovascular disease in adult life *(93)*.

Multiple births often result in relatively small or low-birth-weight infants. In some countries *(94)* the number of multiple births is increasing rather strongly. This can probably be ascribed to the increasing average childbearing age of women, and to the application of modern medical technology such as hormone treatment and *in vitro* fertilization to infertility problems.

Because of the effect of preterm (≥ 1 month before the due date) and multiple births on birth weight, it is important to include these aspects in birth weight monitoring.

In principle, administrative records such as birth registration or maternity records should be the main source of information for this indicator. If these sources are not available or a need is felt for additional information from surveys (for instance birth weight by socioeconomic status or other characteristics of the parents) it is recommended that questions on birth weight are included in health interview surveys.

It has been shown that parents are able to report the birth weight of their children: even for children a few years old the birth weight is remembered with sufficient precision *(95)*. It is recommended that questions be posed only to parents of children aged four years or less.

*Instrument*

**Birth weight**

1. Is the child a twin or triplet?
   - Yes [multiple birth]
   - No

2. Was the child born before it was due?
   - Yes
   - No (go to question 4)

3. Was that less than one month before it was due or more than that?
   - Less than one month
   - One month or more

4. How much did the child weigh at birth? (record in grams)

The question should be asked of one of the parents (proxy) for each child aged four or less. Dates of birth should be recorded to enable adequate tabulation of age.

*Presentation of data*

The positive health indicator percentage of neonates having a birth weight of 2500 g or more at birth should be presented as a minimum (health for all indicator 16.4). It is desirable to present separate percentages for boys and girls. In addition, the distribution of birth weights can be given, e.g. the categories < 1500 g (very low birth weight), 1500–1999 g, 2000–2499 g, 2500–2999 g, 3000–3499 g, 3500–3999 g, 4000–4499 g and ≥ 4500 g. Average birth weights may also be presented.

As mentioned before, it is informative to give the percentages of preterm and multiple births. Birth weight data should at least be presented for single (live) births. Additionally, it is relevant to give data for full-term single births and, if sample sizes allow such disaggregation, also for preterm single, full-term twin/triplet and preterm twin/triplet births.

Disaggregation of birth weight data by background characteristics, such as urban and rural areas, geographical or administrative subdivisions, and socioeconomic groups (e.g. level of mother's education) is also relevant.

## Breast-feeding

*Background*

The general consensus of medical opinion is that the mother's milk is the best food for babies. Health for all target 7, which focuses on improving the health of children and young people, should be achieved *inter alia* by promoting the breast-feeding of infants by the greatest possible proportion of mothers, including working mothers. The promotion of breast-feeding is also seen in the context of positive health behaviour (target 16): health for all indicator 16.6 concerns the monitoring of the percentage of children breast-fed at different ages (six weeks minimum).

There seems to be little doubt that breast-feeding has a positive effect on the health and growth of infants *(88)*. Breast milk provides all the nutrients needed by the infant in the first few months of life and breast-fed infants are at a reduced risk of a variety of health problems, including infectious diseases and allergies *(96–98)*. Premature infants have been shown to have higher developmental and intelligence scores later in life when they are given breast milk than when they are not *(99)*. WHO advises exclusive breast-feeding from birth to four to six months of age. Thereafter, children should continue to be breast-fed, while receiving appropriate and adequate complementary foods, for up to two years of age or beyond.

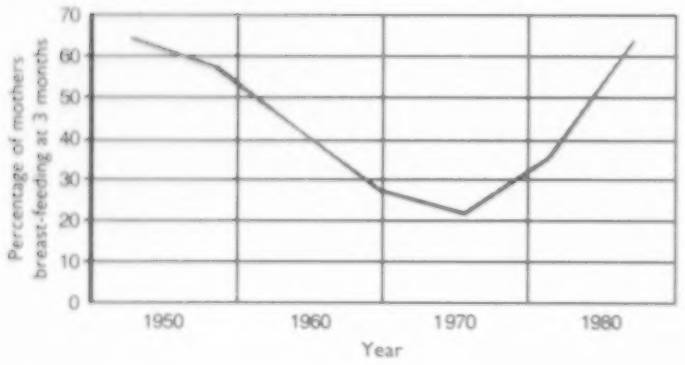
Breast-feeding is especially advantageous in developing countries, where conditions for appropriate bottle-feeding, such as hygienic preparation and breast-milk substitutes of high quality, are often not available. Although in most, but not all, industrialized countries breast-milk substitutes of high quality are widely available and affordable, human milk also offers advantages here, as indicated above, including less strain on the baby's metabolic system.

For many years there has been concern about the effect of environmental pollution (polychlorinated biphenyls and dioxins) on the health of breast-fed babies. So far, studies have indicated that the average intake of these substances is below levels that might cause adverse health effects, and breast-feeding should therefore not be discouraged *(100)*.

In the developed countries, there was a steady decline in breast-feeding from the 1930s to the 1960s. Breast-feeding promotion programmes contributed to a reversal of trends in the 1970s *(88)* (see Fig. 3). In the second half of the 1980s there seems to have been no further significant increase in some countries, and in some even a slight decline *(12)*.

As is the case with the indicator on birth weight, information about breast-feeding can be obtained from registers in a number of countries. But it is also an item worth including in population surveys, which have the advantage of providing full coverage based on representative samples, quick availability of data, and availability of background variables of the child and parents. It is recommended that the

Fig. 3. Breast-feeding in Oslo, Norway, 1950–1980




Source: Evensen (96)

instrument should refer to breast-feeding at three ages of the child: six weeks, three months and six months. The question should be asked of parents of children aged between six months and four years, and partial breast-feeding should be included.

*Instrument*

**Breast-feeding**

For each child between six months and four years of age, ask:

Was the child breast-fed (include partial breast-feeding) at the age of:

| | Yes | No |
|---|---|---|
| 6 weeks | 1 | 2 |
| 3 months | 1 | 2 |
| 6 months | 1 | 2 |

*Presentation of data*

For health for all indicator 16.6 the percentage of children breast-fed at six weeks, three months and six months of age should be presented. Additionally, it may be relevant to relate breast-feeding practices to characteristics of the mother, such as age, parity, educational level, whether employed or not, and lifestyle aspects (e.g. smoking).

*Comments*

Since for children younger than six months of age the recommended instrument cannot be completely filled in, it is advisable to restrict the calculation of the health for all indicator to children of six months and over (up to four years). However, for other research purposes it may also be relevant to collect data for children of less than six months.

Breast-feeding for less than six weeks, which is not included in the recommended question, may occur rather frequently. In the Netherlands, for instance, data for children from six months to four years of age in the period 1989–1992 show that 68% had been breast-fed from birth, while at six weeks of age the breast-feeding rate had already fallen to 54% *(101)*. It may therefore also be relevant to monitor the percentage of children that were breast-fed from birth. This can be realized by adding a preliminary question to the recommended instrument ("Was the child breast-fed?", yes/no) or to add in the recommended instrument the category "from birth" before the category "six weeks".

## Body Mass Index

*Background*

Obesity is considered to be a major public health problem and, since it is very difficult to cure once established, prevention is critical. The prevalence of obesity (body mass index > 30 kg $m^{-2}$) among people of 40–60 years of age exceeds 10% in European countries *(102)*. Obesity is associated with various chronic conditions, such as hypertension, hyperlipoproteinaemia, gout, diabetes mellitus and cardiovascular disease *(103)* and leads to functional limitations in the activities of daily living *(104)*.

Between relative weight (weight corrected for height) and mortality there is a well known U- or J-shaped relation: excess mortality occurs among both the obese and the very thin *(105)*. However, mortality among the very thin is caused by categories of diseases (some cancers for instance) other than those responsible for mortality among the obese *(106)*. Being underweight may also be the consequence of such illness rather than an etiological factor; this needs to be considered when risk factors are being assessed.

Although obesity is a complicated phenomenon with a multifactorial origin – in which environmental factors play a role – it is basically caused by excess food intake relative to the level of expenditure. The monitoring of the prevalence of obesity, and of the distribution of body mass index (weight/height$^2$) in general, is therefore an important indicator (indicator 16.10) in the context of health for all target 16, which aims at the promotion of healthy lifestyles.

Body mass index (BMI) or Quetelet's index is a measure of a person's weight relative to his or her height that correlates fairly well with body fat content in adults *(105)*. BMI has been accepted by expert committees as the most useful measure of obesity in adults when only weight and height data are available *(107,108)*. According to the classification of Garrow *(109)*, obesity is defined as a BMI of 30 kg/m$^2$ or more. This has become a generally accepted cut-off point for obesity or being severely overweight *(110)*. There is as yet no international consensus about the classification of moderate obesity; a BMI range of 25–30 kg/m$^2$ is often used *(110)* but a cut-off point of 27 kg/m$^2$ is also common *(111)*.

Weight and height data for individuals can be collected in health interview surveys. Most respondents are able to state weight in kilograms and height in centimetres. Although self-reporting gives small but systematic errors – height tending to be overstated and weight underreported – the magnitude of misreporting is small on average *(112)*. Rounding to 0 or 5 also occurs in self-reporting, but this does not seem to influence average values *(113)*. Self-reported weight and height are therefore considered to be a sufficiently reliable basis for calculating BMI.

*Instrument*

**Body mass index**

What is your height without shoes? ..... cm

How much do you weigh without clothes and shoes? ..... kg

Women should be asked whether they are pregnant and, if so, what their weight was before pregnancy

The recommended minimum age for the calculation of BMI is 18 years. It is also relevant to collect information on weight and height of children under the age of 18 in health interview surveys, but these data should be related to a precise indication of age, down to the nearest month (see the "Comments" section below).

*Presentation of data*

For each respondent, BMI is calculated by dividing body weight in kg by body height (in m) squared. It is recommended that the distribution of BMI be classified and presented as follows:

| | | |
|---|---|---|
| under 18 | | (severely underweight) |
| 18 and under 20 | | (underweight) |
| 20 and under 25 | } | (normal) |
| 25 and under 27 | } | |
| 27 and under 30 | } | (overweight) |
| 30 or over | | (severely overweight; obese) |

On the basis of these ranges, different definitions for being overweight can be applied, i.e. a BMI of 25–30 or 27–30. For a more detailed insight into the frequency distribution of BMI, finer breakdowns of the above-mentioned classification can also be produced.

For health for all indicator 16.10, the distribution of BMI, including the percentage of the population with a BMI of greater than

30 kg/m$^2$, should be presented by age (excluding ages < 18 years) and sex.

Furthermore, it is relevant to disaggregate data by other characteristics, such as socioeconomic status. Frequently, the percentage of obese persons is inversely correlated with level of education *(114)*.

*Comments*

Age is an important variable in relation to BMI. According to studies conducted in industrialized countries, BMI increases with age until about 50 years of age in men and until menopause in women, then remains fairly constant and decreases after the age of about 70 years *(106,114,115)*. It should be noted that the risk to health posed by obesity seems to be larger in younger than in older people *(105)*; above 65 years of age there appears to be hardly any relationship with mortality *(116)*. There are also indications that the sensitivity of the estimates of obesity based on self-reported weight and height, as compared with measured weight and height, is less in the elderly than in younger age groups *(117)*. BMI data for the elderly should therefore be used and interpreted with care.

For growing children, BMI can only be applied as an age-dependent index, for instance by using BMI percentiles by age as reference values *(118–120)*. However, childrens' nutritional status is commonly evaluated by comparing their weight for height and weight for age with appropriate reference values. In the framework of the health for all indicators (indicator 16.5) a child's nutritional status is defined as acceptable when these indices fall within the range of 80%–100% or ± 2 standard deviations of the reference values established by the United States National Center for Health Statistics *(13)*. Indicator 16.5 is not included in the list of indicators that can only or best be covered through health interview surveys (see Chapter 1) because weight and height data for children are often available from routine registers or sentinel surveillance. However, health interview surveys are also a possible source of these data. Survey information on the weight and height of children, collected by proxy interview with one of the parents, does not seem to deviate significantly from that from other sources *(113)*.

## Socioeconomic Classification

*Background*

One of the central topics of public health research is socioeconomic inequality in health. Within countries there are marked inequalities in health status between the more and the less privileged groups. Reducing health differences between groups of different socioeconomic status by improving the health status of disadvantaged groups is considered to be one of the most important targets of health policy. In the health for all strategy, equity in health is addressed in target 1. Equity in health implies that ideally everyone should have a fair opportunity to attain his or her full health potential and, more pragmatically, that no one should be disadvantaged from achieving this potential if it can be avoided. The term "inequity" refers to differences in health that are not only unnecessary and avoidable but, in addition, are considered unfair and unjust *(121)*. In order to identify inequity it is important to analyse differences between socioeconomic groups and to understand the reasons for those differences.

Being a key aspect of target 1 of the health for all strategy, the measurement of socioeconomic status should be a part of population surveys that cover health indicators. The primary purpose of assessing socioeconomic status in health interview surveys is the description and evaluation of health differences.

Socioeconomic status has a broad meaning covering several related dimensions. The most important concepts used to define or reflect it are education, wealth, income, occupation and economic position.

Level of **education** is seen as the most useful indicator because it has an element of permanence: once someone has achieved a certain level, it is likely to remain the same for life or at least for prolonged periods. There are two different measures for distinguishing education levels. The more common, which is similar to the basis of the International Standard Classification of Education *(122)*, uses the number of years of full-time education as a basis or, alternatively, the last educational establishment attended full-time: primary school, lower secondary school, higher secondary school or post secondary school.

Another possible measure is the highest qualification level achieved. It is recommended that the number of years of schooling should be measured; measurement of qualifications achieved is also useful, but of lower priority. Both are included in the recommended instrument.

Indicators of **wealth**, such as number of rooms, housing tenure and car ownership, are easy to collect but have not been used in many countries. Because indicators of wealth may vary between countries, further investigations are needed before they can be recommended for general inclusion in health interview surveys.

**Income** is a valuable variable when accurate information can be collected and when there is not a great reduction in participation rates (item non-response). Problems also include definition difficulties, such as household versus individual income, gross versus net, earned versus total, usual versus current and cash versus kind. It is recommended that income should be measured as total, net, current, usual and household income. Income can be collected as a continuous or as a categorical (banded) variable. The advantages of the latter are simplicity in the interview and higher response, because some informants know their rough income and can indicate a band but are not aware of their precise income. The disadvantage is that it reduces the flexibility for re-banding during data analysis, which is particularly important for producing deciles or quintiles or for adjusting for inflation. The flexibility for re-banding can, however, be increased by using a fine banding at the time of data collection. It may be best for some countries to collect exact income, but for most it is only feasible to use a categorical variable. It is recommended that a categorization is used that enables the sample to be grouped into quintiles. The advantage in using a relative classification such as quintiles, rather than absolute income levels, is that it is then possible to measure trends in health status by income level without having to adjust for inflation, and to compare different countries without having to adjust for exchange rate differences. Grouping into quintiles can be realized by using a fine banding in about 20 categories during data collection.

The use of **occupation** as a classification variable is probably one of the earliest examples of social research in modern times – the

analysis of occupational mortality based on death registration data. For international comparisons a simple grouping of occupations in three categories is usually used, i.e. non-manual/non-agricultural, manual/non-agricultural, and agricultural. Research is currently in progress to develop a common occupational classification for all countries in the European Union, based on the 1988 version of the International Standard Classification of Occupation (ISCO-88)*(123)*. The occupations included in ISCO-88 are classified into 10 groups on the basis of the complexity of the tasks of the occupations concerned, the knowledge and experience required, and the educational level normally associated with occupations. Besides some unresolved technical problems related to comparability between countries, this grouping does not result in an ordinal scale of social class, which makes it less useful for research on health inequalities. For health interview surveys, a grouping based on the non-manual/manual/agriculture division of occupations is recommended. Classification into the three categories mentioned earlier is recommended as a minimum. A more detailed extension of this classification into eight categories is preferable, and is described in the instrument. This classification is not completely ordinal because of the separation of agricultural occupations, which form a significant and different type in many countries and often have worse health status than other occupations. It would, however, be possible to derive an ordinal scale from this eight-category classification by putting "farmers" in the "managers, associate professionals" category and "farm workers" in the "semi-skilled manual" category. The classification of occupations into the three- and eight-category scales could be based on ISCO-88, but individual countries may reach the recommended variables through their own classifications.

An important aspect of socioeconomic status is whether a person is employed, unemployed, retired, looking after the home or family, a student or in some other category. It has been found in many studies that a person's **economic position**, in particular whether unemployed or not, is associated with his or her health status. It is recommended that information on economic position should be collected in health surveys, particularly to identify the unemployed as a separate group.

*Instrument*

**Education**

**1. Number of years of full-time education**

For how many years did you attend school full time (exclude college)?

- Not yet finished — X (go to question 2)
- No schooling/less than one year — 0 (go to question 2)
- No. of years — .....

Did you attend college or other full-time further education after completing schooling? If so, how many years did this last?

- No. of years — .....

*Note: in some cultures the difference between school and college may not be clear. A single question covering both provides the required data, if such a question will work*

**2. Qualifications**

Do you have any of the qualifications shown on this card?

(A showcard and coding frame to be developed by each country with the aim of providing a four-category classification)

- No qualifications — 1
- Qualifications at or below a lower secondary school level — 2
- Qualifications at higher secondary school level — 3
- Higher qualifications — 4

(For an example of a showcard and coding frame, see Annex 4)

**Occupation**

1. *If employed:* What was your job last week?

   *If not employed:* What was your most recent job?

   *If retired:* What was your main job?

   Job title: .....

   Describe fully (what do/did you actually do in your job):

   .....

2. Are/were you an employee or self-employed?
   - Employee 1 (go to question a)
   - Self-employed 2 (go to question b)

   (a) Are/were you:
   - manager 1
   - foreman/supervisor 2
   - other employee 3

   (b) Do (did) you employ any other people?
   - Yes 1
   - No 2

The answers to these questions should be coded to three categories:

(i) non-manual, non-agricultural
(ii) manual, non-agricultural
(iii) agricultural.

Preferably there should be eight categories:

- professional, senior officials (i)
- managers, associate professionals (i)
- junior non-manual, clerks (i)
- skilled manual (ii)
- semi-skilled manual (ii)
- unskilled manual (ii)
- farmers (iii)
- farm workers (iii).

**Economic position**

| | | |
|---|---|---|
| 1. Are you doing any paid work at present? | | |
| – Yes | 1 | (end) |
| – No | X | (go to question 2) |
| 2. Do you have a paid job that you are away from at present? | | |
| – Yes | 1 | (end |
| – No | X | (go to question 3) |
| 3. Are you at present | | |
| – waiting to take up a job | X | (go to question 5) |
| – looking for work | X | (go to question 4) |
| – unable to seek work because of temporary illness or injury | 3 | (end) |
| – permanently unable to work | 4 | |
| – retired | 5 | |
| – at school or college | 6 | |
| – looking after the home or family | 7 | |
| – other | 8 | |
| 4. Have you looked for paid work at any time in the last 4 weeks? | | |
| – Yes | X | (go to question i) |
| – No | 8 | (end) |
| (i) If a job became available would you be able to start it within two weeks? | | |
| – Yes | 2 | (end) |
| – No | 8 | (end) |
| 5. If the job was available now would you be able to start it within two weeks? | | |
| – Yes | 2 | |
| – No | 8 | |

The code categories are:

1. working
2. unemployed
3. unable to seek work because of temporary illness or injury
4. permanently unable to work
5. retired
6. at school or college
7. looking after home or family
8. other.

## Income

1. I now want to ask about your total income (that is, the total income of all the people in your household).

   *One adult household*
   First, are you doing any paid work at present?
   - Yes 1
   - No 2

   *Two or more adults*
   First, how many people in your household are doing paid work?
   - None 0
   - One or more 1

2. Are you (is anyone in the household) receiving a pension from a previous employer?
   - Yes 1
   - No 2

3. Are you (is anyone) receiving any state benefits?
   - Yes 1
   - No 2

4. Do you (does anyone) have any other source of income such as interest, payment from other people, etc?
   - Yes. 1
   - No 2

5. *One adult household*
   Can you please look at this card and tell me which group your *total* net income falls into (present showcard).

   I want you to include all your income – earnings, pension, benefits and so on – after deduction of tax, national insurance.
   - Group number ...
   - Refused 1
   - Does not know 2

   *Two or more adults*
   Can you please look at this card and tell me which group the *total net* income of all the people in your household falls into (present showcard).

   I want you to include all income – earnings, pension, benefits and so on – after deduction of tax, national insurance.
   - Group number ...
   - Refused 1
   - Does not know 2

With respect to the measurement of occupation, it should be noted that "housewife" is an acceptable occupation. It may be classified in the category "unskilled manual" of the recommended eight-category scale, and in the "manual, non-agricultural" category of the three-category scale.

The questions on income should preferably be asked of the head of the household, or otherwise his or her spouse. An example of a showcard for income (relating to the questions in section 5 of the instrument) is given in Annex 4. On this showcard, categories of monthly and weekly income are presented. Income categories can also be given for annual income, which can be relevant, for example, for self-employed people such as small traders.

It is recommended that the socioeconomic variables (except income) are collected for each individual separately and also that each household and/or each member of the household is given a value according to the value of the household reference person (head of household): no recommendation has been made yet about how to define the reference person. For income, data are collected at household level only.

*Presentation of data*

The first step in the description of health inequalities is the presentation of health problems per socioeconomic class, for example the prevalence of long-term disability per socioeconomic status category for each of the four status indicators.

The degree of possible inequality may be assessed by the differences between extreme categories. However, the extreme values depend greatly on how a variable is categorized, in particular how finely it is categorized at the extremes. A more comprehensive method of establishing the degree of inequality is the use of an index that includes health information of all categories of a status variable. Several of such summary indices have been developed, such as the index of dissimilarity or index of inequality developed by Koskinen (unpublished data, 1988) and an index developed by Preston *(124)*, which has recently been used in an international study of socioeconomic inequalities in self-reported health *(26)*. Using Preston's index, countries in the latter

study could be compared even when different (but always hierarchical) classifications of educational, occupational or income groups were applied. The interpretation of the results should, however, take into account the fact that this index is based on the assumption that the extent of the differences in socioeconomic status is the same between countries. This implies that when relatively large health inequalities are found for a country, this could be partly due to larger differences in the "absolute" levels of the socioeconomic variables themselves.

*Comments*

It is recognized that collecting information on all the classification variables listed here may be too onerous a task. It is recommended that at least education should be measured and, if possible, occupation and/or income as well.

Instruments that cover geographical divisions, such as urban/rural, and ethnic minorities may also be relevant for inclusion in health interview surveys.

## INDICATORS FOR WHICH RECOMMENDED INSTRUMENTS ARE NOT YET AVAILABLE

### Chronic Conditions (Physical)

*Background*

At present there are still considerable gaps in knowledge of the incidence and prevalence of chronic diseases. Health interview surveys are considered to be an important source for this kind of information, but a common methodology is currently lacking. With respect to chronic mental conditions, there is hardly any information based on health interview surveys available but, during the consultations, some apparently appropriate instruments for the assessment of some major chronic mental conditions could be recommended; these are described in the section on chronic conditions (mental) on page 65 and in Annex 4. For the measurement of chronic physical conditions it is not possible to recommend any instruments for the time being; in this section current considerations are described briefly.

Many national and regional health interview surveys include questions on the assessment of chronic morbidity with respect to physical

conditions. These instruments show a great variety in methodology, e.g. differences in the nature of the diseases, in the number of diseases, in the definition of severity and in the wording of the questions. One of the main problems in the latter is the distinction between the use of diagnoses and symptoms. Respondents' knowledge of chronic morbidity in terms of diagnosis is often limited. It is more difficult to collect reliable survey data about disease and impairment than, for instance, about disability. Disability usually impinges more directly on daily life, so that questions about it are more meaningful to informants than are questions about disease or impairment.

*Recommendations*

During the three consultations the following issues with respect to the measurement of chronic conditions were discussed: definition and classification of chronic conditions; criteria for selection of conditions; incidence or prevalence measurement; and the wording of questions *(125)*.

The criteria for defining chronic illness have been based on a definition of chronic disease formulated in 1957 *(126)*:

> Chronic diseases comprise all impairments or deviations from normal which have one or more of the following characteristics: are permanent; leave residual disability; are caused by non-reversible pathological alterations; require special training of the patient for rehabilitation; may be expected to require a long period of supervision, observation or care.

During the consultations it was decided that two criteria were sufficient to distinguish between acute and chronic disease, namely the nature of the disease and its duration. It was suggested that a duration of six months should be used.

The ICD *(20)* provides an exhaustive systematic nomenclature of all conditions, chronic or acute. There was general agreement that chronic conditions should be classified according to the ICD: chronic conditions should therefore be measured in such a way that results can be presented according to this classification.

Five criteria are recommended for determining which chronic diseases should be included in a health interview survey:

- prevalence (the number of people suffering);
- severity of the disease (mortality, hospitalization, other medical consumption, limitation of functions, relation to the ICIDH *(21)* and quality of life);
- economic cost;
- use of health care services; and
- amenability to self-reporting.

Using these criteria, the following chronic conditions could, for example, be selected: hypertension, asthma, bronchitis, thyroid trouble, diabetes, chronic skin condition, chronic heart disease, chronic cystitis, chronic dental problems, chronic back problems, arthritis and stroke.

In relation to whether surveys should measure incidence, prevalence or both, for the great majority of conditions prevalence is regarded as the most important measure in a European context. Countries concerned with the incidence of particular conditions could ask additional questions concerning the onset of those conditions.

The wording of the questions must be based on the respondent's ability to understand the described condition. In some cases, such as diabetes, the disease name is sufficient; in others, such as asthma, additional questions or symptoms are necessary, and in yet others such as back problems, an alternative wording must be used. For each condition measured in terms of diagnosis, respondents should be asked whether a health professional has made the diagnosis.

In order to develop a common instrument for the measurement of chronic conditions in health interview surveys, further study is recommended. A specific research project is currently under way[2] addressing the following topics.

*(a)* For which groups of chronic and acute conditions is measurement in health interview surveys desirable?

[2] For further information contact Dr W. Davidse or Dr H.P.A. van de Water, TNO Institute of Preventive Health Care, P.O. Box 124, 2300 AD Leiden, Netherlands.

*(b)* What are the experiences with questions on chronic morbidity in health interview surveys?

*(c)* Based on *(a)* and *(b)*, what conditions are suitable for measurement in health interview surveys, and how should these conditions be measured?

## Long-term Disability (Mental/Social)

*Background*

With respect to health for all target 4 on the reduction of chronic diseases and disabilities, the attention paid to mental health problems has increased significantly over the past few years. Target 12 of the health for all strategy now also aims specifically at reducing the prevalence of mental health disorders and improving the quality of life of people with such disorders.

The measurement of mental conditions is described in the section on chronic conditions (mental) on page 65; the present section is concerned with the measurement of disabilities that are associated with such mental conditions, here called *social disabilities*. Psychiatric disorders have the potential to affect several aspects of the individual's life negatively and to increase the use of medical services, in particular those covering mental health problems. Mental health disorders contribute heavily to the total burden of disability in the population, especially within the younger age groups. According to a study in the Netherlands, approximately one third of all disabled people aged 25–34 years were disabled by mental illness *(127)*.

For the measurement of health for all indicator 4.2 (the percentage of the population experiencing different levels of long-term disability) social disabilities are distinguished from physical long-term disabilities. The classic indicators for long-term disability refer to the ability to perform day-to-day activities such as personal care. The instrument that is described and recommended in the section on long-term disability (physical) on page 55 builds on this tradition. However, the activities included do not specifically relate to the primary consequences of mental health disorders. When ICIDH *(21)* is used to select disabilities that are important in relation to mental conditions, behaviour disabilities and, in particular, disabilities in human relationships are of relevance.

The design of a short measurement instrument for these disabilities is less straightforward than for physical disabilities; because social disabilities encompass a rather broad area of functioning, these patterns cannot be assessed with a few simple questions. Instruments that cover these different areas will therefore have to be much more extensive than those that measure areas of physical disability such as seeing or hearing.

Most instruments for the assessment of social disabilities deal with the measurement of social functioning, social adjustment, the social roles that pertain to these functions (occupational role, family role, etc.) and the disabilities that people have in fulfilling these roles. A comprehensive summary of these instruments can be found elsewhere *(128,129)*. Most of these instruments are, however, not suitable for health interview surveys because they are designed for use in clinical settings, because the scales are methodologically and conceptually not well elaborated, and/or because they cannot be used with younger or older age groups.

An instrument that has been closely designed within the conceptual framework of ICIDH is the Groningen social disabilities schedule (GSDS) *(130,131)*. Its purpose is to obtain information about a person's social functioning, and subsequently to assess his or her disabilities in this context. This instrument addresses eight social roles that are relevant for the measurement of the social consequences of mental illness, including the role of self-care (bodily care and hygiene, management of personal possessions), role in the household (taking part in household activities), role as a partner (emotional ties, sexual role or relationship with partner) and occupational role (role in profession, trade or other regular activities).

Versions of GSDS exist in Dutch and English, both for face-to-face interviews and for self-administered questionnaires, and the instrument is suitable for all persons aged 16 years and older. These characteristics, together with favourable experiences with respect to reliability, make GSDS a promising instrument. The current self-rated version (GSDS-SR) is, however, too long and too time-consuming (119 items, 8–15 minutes of administration time) to be recommended for standard inclusion in health interview surveys. In cases where it is possible to include the complete GSDS-SR in a population survey, a two-stage

procedure is advisable. However, a satisfactory screening question is not yet available.

*Recommendations*

The further study of the GSDS-SR[1] may possibly show whether a core set of questions could be selected from the current version for use in health interview surveys.

It is recommended that a separate version for proxy informants should be developed, for cases where the respondent is unable to answer the questions.

If an appropriate short list of items on social disability could indeed be developed, the two-stage procedure would probably be abandoned. Such a list could possibly form part of one instrument measuring both mental and physical long-term disability, as requested for health for all indicator 4.2.

## Food Consumption

*Background*

Major chronic diseases such as cardiovascular disease and several cancers are associated with dietary factors *(132,133)*. Promoting healthy dietary patterns is therefore an important part of health for all target 16 on healthy living.

In order to monitor the adequacy of the diet of the population and its subgroups, it is necessary to conduct national food intake studies. Using food intake data, together with information on the nutrient content of foods derived from food composition tables, the intake levels of nutrients (fats, carbohydrates, vitamin A, calcium, etc.) of a population can be estimated. The nutritional adequacy or "healthiness" of the diet of particular population groups, specified by age, sex, and special physiological needs such as pregnancy and lactation, can be evaluated by comparing actual nutrient intakes with the specific nutrient standards for these groups *(134)*.

[1] For further information on GSDS, contact the Department of Social Psychiatry, Groningen State University, P.O. Box 30001, 9700 RG Groningen, Netherlands.

For information on the food consumption of a population, two types of source can be distinguished. First, there are food balance sheets and household budget surveys, which give information on the availability or supply of foods at the national and household level, respectively. Food balance sheets are national accounts of the annual production of food, changes in food stocks, imports and exports; they show only major structural changes in the dietary pattern of a country. Household budget surveys can provide more detailed information about the acquisition of foods by groups of households, differentiated according to demographic, socioeconomic and geographical characteristics *(135)*. There are also dietary studies, which measure the food intake of individuals. These provide the type of information that is needed for comparing the actual food intake of specific population groups with appropriate nutrient standards.

There are several methods of measuring food intake at the individual level. These fall into two main classes: record methods and recall methods (Table 6).

Table 6. Summary of methods for measuring food intake at the individual level

| | |
|---|---|
| **Record methods**: | subjects keep records of current food intake during one or several days |
| – Weighed record | |
| – Estimated record | |
| **Recall methods**: | interview or questionnaire about food intake in the recent past |
| – 24-hour recall | |
| – Dietary history | |
| – Food frequency questionnaire | |

Record methods assess current food intake by means of diaries in which subjects record the foods they consume during one or several days. In the *weighed record method* the food portions are actually weighed by the subject; in the *estimated record method* the subject records the portion sizes in household measures (cups, spoons, etc.).

Recall methods use various forms of interview to measure individual dietary intake in the recent past, such as the *24-hour recall*,

*dietary history*, and the *food frequency questionnaire*. In the 24-hour recall the actual food consumption in the last 24 hours is recalled; the dietary history collects information about the average food intake over a longer period of time, varying from the last month to the last year. These two methods are semi-open interviews, usually administered by dieticians, which start with the daily meal pattern and have open questions about the foods consumed during and between these meals. The food frequency questionnaire, on the other hand, is a fixed questionnaire with questions on the frequency and often also the quantity of the intake of particular foods, selected beforehand.

In deciding which of these methods should be used to fulfil the specific objective(s) of food intake measurement, it is important – apart from other considerations such as costs – to consider how accurate the measurement should be, whether it is necessary to measure the habitual intake of an individual, and whether total diet or only selective elements (related to specific nutrients) need to be investigated.

Record methods are considered to be the most accurate means of dietary assessment but, especially in the case of weighed records, it is difficult to get the cooperation of a representative population sample in keeping detailed records of their food intake. The 24-hour recall is also relatively accurate as the period of recall is short; memory effects do occur but are not a major problem. However, given the generally large intra-individual variation in food intake, a disadvantage of these methods is that food records or recalls of only one day are usually not representative for the habitual intake of an individual. Therefore, unless multiple-day records or repeated recalls are made, these methods can only be used for estimating the mean nutrient intake of population groups.

Food consumption data collected by dietary history or food frequency questionnaire reflect better the habitual intake of an individual, but memory effects are more likely. The food frequency questionnaire is by its nature the least accurate method, especially if the total nutrient intake has to be assessed, as this requires the inclusion of a very large number of food items on the questionnaire. For a detailed overview of the advantages, disadvantages and validity of the different methods, see Cameron & Van Staveren *(136)*.

The importance of measuring the habitual intake of an individual depends on the objectives of the food consumption study. If nutrient intake data are to be used only to calculate mean nutrient intakes of population groups, it is not necessary to measure habitual intake and it is statistically preferable to use an accurate one-day record or recall method. However, if the data are also to be used in correlation or regression analysis, relationships will be attenuated and the power of statistical tests will be reduced if the method used does not measure habitual individual intake *(137)*. In this case, multiple-day food records, repeated 24-hour recalls, dietary history or a food frequency questionnaire can be used.

With respect to the suitability of including these methods in a health interview survey, the food frequency questionnaire seems to be the most attractive because data collection is relatively cheap and simple. However, it is also the least accurate method. The other methods may be incorporated or combined with a health interview survey if sufficient space and resources are available. With regard to the international standardization of food consumption measurements, it is unfortunate that the method that is most easy to standardize, the weighed record, is in general not suitable for large-scale studies; while the most convenient method, the food frequency questionnaire, is the most difficult to standardize. Because meal patterns and foods consumed differ substantially between countries, it is very difficult – if not impossible – to develop common instruments for food frequency questionnaires. Furthermore, even when the same foods are consumed, standardized instruments are often not possible because of differences in portion sizes, frequency of consumption, and meal patterns.

In most national health interview surveys only a few questions on dietary practices are included *(22)*. In some cases these cover attitude, knowledge and self-assessment about dietary concepts, and may yield relevant background information for policy-makers who want to change certain dietary habits. Other questions concern indicators for healthy food intake patterns, such as the two questions of the "ALAMEDA-7" questionnaire about the use of breakfast and the consumption of snacks between meals *(138)*. However, longitudinal studies could not demonstrate a relationship between these practices and future health status *(139,140)*, which indicates that the validity of these indicators is questionable. In countries where a large variety of foods are consumed,

short food frequency questionnaires generally do not provide reliable indices for healthy dietary habits *(141,142)*. For health interview surveys, therefore, it may be best to concentrate on the development of food frequency questionnaires containing lists of foods that are comprehensive enough to permit the accurate calculation of intake of one or more nutrients.

Overall, it can be concluded that the design of food intake studies in general, and the international standardization of related methods and instruments in particular, is a very complex matter. Dietary assessment methods are under constant development, and international collaboration is beginning to gain momentum. The consultations were therefore unable to recommend specific methods and instruments for food intake measurements in health interview surveys at the present time. However, a number of general recommendations were made.

*Recommendations*

It is recommended that for health for all indicator 16.11, the objective of a food intake measurement in a population survey should be, at least, to assess the average daily intake of fat (total and saturated) relative to total energy intake, by age and sex and preferably also by socioeconomic status. The rationale for this choice is the excessive consumption of fat, in particular saturated fat, in many industrialized countries, which clearly constitutes a health risk. The inclusion of other nutrients will depend on specific national priorities.

None of the several methods available for measuring the intake of nutrients is really short or easy to use. In order to make international comparisons of average nutrient intake, it may be more appropriate to employ a more accurate method with a short reference period, such as the 24-hour recall, or to measure current intake through food records. Assessing past intake over a longer period of time (habitual intake) has the advantage of providing more possibilities for analysis, but this is not seen as a minimum requirement for international comparisons.

It is recommended that, prior to the measurement of food consumption in a survey, respondents should be asked:

- whether they have a special diet or follow a particular dietary regime (minimum answer categories: yes/no); and

- (for female respondents) whether they are pregnant or breast-feeding.

Since special diets and dietary regimes are an important determinant of the individual's nutrient intake, they constitute a valuable variable in data analysis. They offer, for instance, the possibility of excluding subjects on a diet from the analysis in order to get a picture of the intake of the population group with the usual dietary patterns. Data on pregnancy and lactation are also relevant, because pregnant and lactating women may adjust their usual diet, and because the nutrient standards are different for these population groups.

In addition to the measurement of nutrient intake in population surveys which, in view of the magnitude of these studies may not take place very frequently, it is recommended that national trends in the availability of macro-nutrients should be monitored on a regular basis. In health for all monitoring, FAO food balance sheet data are used to monitor the average daily availability of energy from fat and protein as a percentage of total energy intake per head (indicator 16.3).

Furthermore, it should be noted that monitoring the distribution of the body mass index in the population (health for all indicator 16.10; see the section on body mass index on page 83) is also relevant in the context of food consumption information, as it may be regarded as a retrospective indicator of energy intake.

*Comments*

Surveys on food consumption can be conducted separately or as a component of another population survey, such as a health interview survey. However, it should be realized that, in the latter case, to provide a good food consumption measurement a considerable part of the total space and resources of the survey will be required. The short version of a Dutch food frequency questionnaire measuring fat and energy intake only, for example, contains as many as 58 items *(143)*. Confronted with limited resources, it may therefore be preferable to include an extensive, well designed, food consumption study in the health interview

survey every five years or so, rather than including a few indicator questions of doubtful validity every year.

Another objective of a food consumption study may be to collect information on the background of food consumption habits. For this type of study it is probably difficult to develop common methods and instruments because of cultural differences in food habits and perception of foods. However, since the information is primarily meant for health policy-makers and for use in education programmes within a country, international standardization may be less relevant.

Apart from standardization of food consumption studies, for intercountry comparisons it is also important to use compatible food composition tables, since these are needed for converting food intake data into nutrient intake data. Several research institutions are working in this area, but so far no internationally compatible tables have been developed.

## Alcohol Consumption

*Background*

Behaviour that presents a risk to health has been a preoccupation of those involved in health education for several decades. With respect to dependence-producing substances, the consumption of alcohol has received considerable attention, besides the use of tobacco and psychoactive drugs. Reduction in the health damaging consumption of alcohol is a key topic in target 17 of the health for all strategy.

The drinking of alcohol is a common feature of many cultures. The likelihood of health problems developing in association with alcohol use increases as consumption of alcohol increases. Such problems include cirrhosis of the liver, some cancers, hypertension and haemorrhagic stroke. Other health problems arise when consumption of large amounts of alcohol in a short period of time results in violence or accidents, particularly traffic accidents.

There is, however, a wide range of opinion about what levels of drinking are "safe" or, more accurately, how upper levels of low-risk drinking should be defined *(144,145)*. This is because of the mixed types of harm that can occur with varying levels of alcohol consumption

and differences in individual susceptibility to alcohol. The matter is further complicated by the beneficial effects that low levels of alcohol consumption may have with respect to the development of coronary heart disease *(146)*.

The population survey is considered to be the main source of information for data on the distribution of alcohol consumption, by quantity consumed, age and sex (health for all indicator 17.2). For measuring this indicator, information is needed on the number of abstainers and drinkers and on the frequency and amount of drinking. Experts attending the consultations were unable to recommend an instrument at the present time because of various methodological problems, such as the low reliability of self-response, which results from a preference for socially desirable answers. When compared with production figures, underreporting of the quantity of alcohol consumed as measured by surveys is, in general, estimated to be about 50% *(147,148)*. In order to make corrections for this, it is necessary to have some knowledge of the deviations per consumption level. Heavy drinkers may underreport more than moderate drinkers. However, a recent study in the Netherlands has shown that deviations in self-reporting are consistent for all consumption levels *(149)*, which indicates that correcting for underreporting may be a promising procedure.

Another methodological problem is the non-response of individuals with a high level of alcohol consumption. Heavy drinkers are often assumed to be more likely to refuse an interview, to be not at home, not to return the questionnaire or to underreport their alcohol consumption. Nevertheless, some studies have indicated that non-response among identified alcoholics is not likely to be a major source of error *(150–152)*.

*Recommendations*

It is recommended that surveys should measure the quantity of alcohol consumption during a "typical" or "average" period of time. The approach may be to ask about consumption during a calendar period (e.g. the week before the interview), and then to ask if that period was typical for the respondent. An alternative approach may be to ask about consumption during the usual, typical or average period of time, e.g."During an average week, on how many days do you drink?".

Although there will be international variations in the questions asked about quantities (e.g. pints, half pints, glasses, cans, bottles, etc.) and the length of period (e.g. one week, two weeks) about which quantity of consumption is asked, questions should be asked in such a way as to be convertible to a standard international unit and standard period. Reporting in grams of ethanol per week is recommended.

While it is desirable to obtain information on alcohol consumption for people of all ages, even early adolescents, problems of legality, ethics and reporting bias may preclude this in many health interview surveys. It is recommended that information should be collected from the youngest age possible, and that health interview surveys should collect alcohol consumption information for at least all those of 18 years and over.

The concept of "harmful use" is important for health for all targets, but no recommendation was made for defining that concept. Rather, it is recommended that quantities should be reported in a standard way, and in sufficient detail, so that a variety of definitions of "harmful" amounts of consumption can be applied.

Alcohol consumption is regarded by many respondents as a very personal and private subject. There is often a tendency for respondents to underreport consumption because of the social stigma they perceive to be attached to high levels of consumption. The sensitivity of the topic and the tendency to underreport must be considered in administering questions. It is recommended that, where possible, questions should be self-completed.

While additional work is required before a set of questions can be recommended for general use, illustrative sets of questions incorporating the general recommendations mentioned above are provided for guidance in Annex 5. They are derived from questions in the national health interview surveys of Australia, Canada, the Netherlands and the United States.

*Comments*

Data on alcohol consumption collected by health interview surveys should, whatever the method used, be interpreted with caution because,

the homeless and the institutionalized population, of which a relatively high proportion are heavy drinkers, are usually excluded, and because the underreporting of consumption is significant. Methods of estimating the extent of underreporting and correcting for it should be further developed.

The order in which questions about alcohol consumption are asked has an effect on responses and ultimately on measures of quantity consumed. Further attention to this aspect, including methodological research, is required.

Population surveys should focus on the quantity of alcohol consumed; this also holds the best prospects for international comparability in respect of health for all indicators. There are, however, other very important aspects of alcohol consumption that should be measured where possible, including physical dependence, behavioural problems, temporal patterns, and the physical and social setting in which consumption occurs.

FAO food balance sheets and household budget surveys also provide information on alcohol, but these data refer only to the availability of alcoholic beverages at the national and household levels, respectively, and cannot therefore be used to assess the alcohol intake of specific population groups according to individual characteristics such as age and sex (see also the section on food consumption on page 100).

5

# Harmonizing Health Interview Surveys: Conclusions and Future Prospects

The health for all indicators have been developed to assess progress towards the implementation of the health for all strategy, and especially the European health for all targets. Apart from their application in monitoring at the international level, they are also useful at national and subnational levels and could in fact form the core of the monitoring system of any governmental or nongovernmental organization with a mandate in health. There is evidence that the health for all monitoring and indicators have indeed influenced the development of national health information systems in various ways. Some countries, and regions within countries, have started to produce health for all oriented public health reports. Others have given additional attention to health interview surveys, being an important source of health information. Reference is being made to health for all indicators in national statistical publications. Such efforts should become routine in all Member States to capitalize on the impact of this very considerable joint effort on the part of them all *(153)*.

The health for all indicator database of the WHO Regional Office for Europe provides a readily accessible, user-friendly, single coordinated source of a wide variety of health and health-related information from the Member States of the Region. It is among the most widely known, available and used sources of international health data. Comparisons with other countries allow individual Member States to focus attention on areas where it may be beneficial to exchange information on each other's successes and misfortunes. Demands for more frequent

updates and greater comparability and quality of the data have grown with the recognition of the importance of this international dimension for national monitoring, planning and policy formulation *(153)*.

To enhance the comparability and quality of data, the consultations have recommended specific instruments for the health for all indicators that can be measured by means of health interview surveys. The next step is to promote the actual implementation of these instruments in the national health interview surveys of the Member States.

## IMPLEMENTATION OF COMMON INSTRUMENTS IN HEALTH INTERVIEW SURVEYS

Practical experience with the health interview survey project has been described in Chapter 2. In this section the possible mechanisms for realizing the implementation of common instruments in national health interview surveys are described.

After the formulation of what appear to be appropriate measurement tools, i.e. the recommended instruments described in Chapter 4, further action has been or needs to be taken to promote the actual implementation of these instruments. First, the instruments need to be made widely known by giving appropriate publicity (promotion). When a number of countries have used the instruments, it is also important to evaluate their experiences. Such evaluation can further promote the widespread use of common instruments, and can lead to the establishment of standard instruments.

### Promotion

Several steps have been taken to promote the use of recommended instruments in health interview surveys. First, the consultations have in themselves been a means of promoting the instruments, because participants who are responsible for surveys or undertake relevant research have been able to encourage the use of these instruments through their own work. Second, the WHO Regional Office for Europe has distributed the reports of the consultations to all Member States in the Region. Third, most recommended instruments have been included in annexes to the WHO monitoring framework documents for recent

health for all monitoring exercises, and have in this way also been distributed to all European Member States. Furthermore, the recommended instruments now appear in this book, together with information on survey methodology, background and practical use, with the aim of convincing those responsible for surveys and health policymakers of the importance of the internationally comparable information collected using these common instruments. Finally, the increasingly used health for all indicator database of WHO, which provides national and regional survey data that are readily accessible to Member States, forms an incentive to implement common instruments in health interview surveys, so as to supply this database with internationally comparable data. To monitor the comparability of survey data it would be helpful to establish a catalogue of national health surveys in Europe.

## Evaluation

In order to test the recommended instruments, they should have been implemented in at least two or three countries, and experience in their use evaluated. Such evaluation can also promote more widespread use of these instruments. Some of the recommended instruments have already been used in a number of countries and can be evaluated using the available data and methodological experiences in these countries. An example of such an evaluation study currently being carried out is described below. Other instruments have not yet been used extensively, and need to be included in health interview surveys in at least two or three countries before they can be evaluated. In Switzerland, for instance, the Federal Statistical Office included two of the three recommended instruments for measuring dementia in a health survey covering the institutionalized population in 1993. The recommended instrument for long-term disability (physical) has been used in Italy and Prague. Furthermore, Statistics Netherlands is considering testing GSDS, which measures long-term social disabilities (see page 99), in a pilot survey. Such initiatives may, in turn, promote the introduction of these instruments in other countries. In principle, there is a possibility that on the basis of the evaluation of recommended instruments certain adjustments may be proposed. However, in order to avoid unnecessary trend disruptions, this should be done only when absolutely necessary, especially when the recommended instrument is already in use in a substantial number of countries.

*Evaluation study of six recommended instruments*

A preliminary investigation in 1992 by the WHO Regional Office for Europe indicated that, for about half of the 11 health for all indicators for which common instruments have been recommended, no or only relatively minor differences in measurement exist between countries (see the section on opportunities for improving the international comparability of health interview survey data on page 28). Since for these indicators it would be possible to evaluate the experiences of countries with the recommended instruments, a further study has been initiated by Statistics Netherlands together with the other countries participating in the consultations and the WHO Regional Office for Europe. The purpose of this study is to ascertain how comparable the data on these indicators are, what differences in measurement still exist, and what the possibilities and opportunities are for achieving widespread use of the recommended instruments. The study concerns 6 of the 11 recommended instruments, i.e. those for measuring perceived health, temporary disability, smoking, birth weight, breastfeeding and body mass index. An appropriate questionnaire was forwarded to the countries concerned at the end of 1993, along with the data request for the 1993/1994 health for all monitoring. In this questionnaire the following information is requested for each of the six health for all indicators:

Information on the most recent survey for which results are available on the respective indicator, including the full questionnaire and the exact wording of the instrument concerned in English translation, type of interview (face-to-face, telephone, self-administered or other), target population, sample size, percentage of non-response, percentage of proxy interviews, and the most recent outcome data by age and sex.

In cases where the wording of the national instrument is not exactly the same as the wording of the recommended instrument, the countries are asked whether there are any plans to adapt the national instrument to the recommended instrument in future surveys. If there are no or only vague plans in this direction, countries are asked to explain their reasons. In addition, they are asked whether they would be more willing to adapt their surveys if at least five or six other countries used the recommended question in the near future.

If available, information is requested on:

- time series on the respective indicator
- methodological reports on validity and reliability
- results of experiments (for instance change of wording of the instrument).

It is expected that this evaluation study will provide more specific information on the present comparability of survey data on health for all indicators, and the prospects for acquiring internationally comparable data in the near future and over a longer term. An important issue in this regard will be how to cope with trend disruption, which is the main constraint in adapting existing instruments that have been in use for many years. When an increasing number of countries start to use the recommended instruments, it may well prove easier for other countries to overcome their hesitation with respect to trend disruption, because of the increased opportunities for international comparison of health data.

### Standard Instruments and Revisions

After evaluation – and adjustments if required – the recommended instruments could be adopted formally as standard instruments. As is the case for other WHO instruments, it is recommended that a procedure be established that enables revision of the standard instruments every five to ten years. Such a revision process could, for instance, be similar to that in use for the ICD classifications.

## CONCLUDING REMARKS

In this publication the importance and practical possibilities of health interview surveys as a source of data for health information systems in general, and for monitoring progress towards health for all in particular, have been described. The many advantages of health interview surveys render them indispensable for health monitoring at national level and most countries employ such surveys, regularly or periodically, to measure a range of health indicators, including a number of

health for all indicators. At the international level, however, the question of comparability of national health interview surveys is rather new. To achieve better international comparability, and to enhance the value of survey results, the health interview survey project – including, in particular, the three consultations described –has made an important contribution by recommending specific instruments for health for all indicators.

It should be noted that WHO does not request, or expect, that new surveys should be launched solely for the purpose of health for all monitoring. Countries performing national health interview surveys are, however, encouraged to adapt existing questions or, where possible, to include certain new questions, following the recommendations of the consultations. For countries that start (or make a new start in) performing health interview surveys, it is in principle easier to accept and adopt the recommended common instruments. History is no burden in these cases and, in general, the investigators acknowledge the advantages in making use of the common instruments: the development (or revision) phase of the questionnaire can be shortened considerably, there is a guarantee that at least some of the most relevant and useful health and health-related indicators are measured, and there is the prospect of international comparability.

One of the most promising strategies for enlarging the number of countries using the recommended common instruments is to show that their use is rewarding: in principle, it provides the possibility of comparing the position of one's own country with that of others. One approach is to develop an international database, consisting of sufficiently comparable survey results on health for all indicators. Such a database, which is presently being developed by Statistics Netherlands and the WHO Regional Office for Europe, could stimulate countries in four ways: (1) those that already have contributed to the database will be stimulated to further harmonize survey questions if necessary; (2) for those that have not yet contributed available data it will be a challenge to overcome practical problems for participation; (3) those that have no or limited data will be stimulated to complete their surveys with indicators for which recommended common instruments exist; and (4) those that have no health surveys will be stimulated to develop new surveys incorporating the recommended common instruments.

As a result of the changed geopolitical situation in Europe, many new Member States have recently joined the European Region of WHO and started participating in monitoring progress towards health for all *(154)*. Where these Member States plan to start new national health surveys in order to build up their health information systems, there is a unique opportunity to implement the recommendations in their surveys.

# References


1. *Health for all targets. The health policy for Europe.* Copenhagen, WHO Regional Office for Europe, 1993 (European Health for All Series, No. 4).
2. *Consultation to develop common methods and instruments for health interview surveys, WHO Regional Office for Europe and Statistics Netherlands, Voorburg, Netherlands, 21–23 June 1988.* Voorburg, Statistics Netherlands, 1989.
3. *Second consultation to develop common methods and instruments for health interview surveys, WHO Regional Office for Europe and Statistics Netherlands, Voorburg, Netherlands, 18–20 September 1990.* Voorburg, Statistics Netherlands, 1991.
4. *Third consultation to develop common methods and instruments for health interview surveys, WHO Regional Office for Europe and Statistics Netherlands, Voorburg, Netherlands, 22–24 September 1992.* Voorburg, Statistics Netherlands, 1993.
5. HOLLAND, W.W. ET AL., ED. *Measurement of levels of health.* Copenhagen, WHO Regional Office for Europe, 1979 (WHO Regional Publications, European Series, No. 7).
6. ABELIN, T. ET AL., ED. *Measurement in health promotion and protection.* Copenhagen, WHO Regional Office for Europe, 1987 (WHO Regional Publications, European Series, No. 22).
7. *Regional strategy for attaining health for all by the year 2000.* Copenhagen, WHO Regional Office for Europe, 1980 (document EUR/RC30/8, Rev.2).

8. *Targets for health for all: targets in support of the European regional strategy for health for all*. Copenhagen, WHO Regional Office for Europe, 1985 (European Health for All Series, No. 1).
9. *Evaluation of the strategy for health for all by the year 2000. Seventh report on the world health situation. Vol. 5. European Region*. Copenhagen, WHO Regional Office for Europe, 1986.
10. *Revised list of indicators and procedure for monitoring progress towards health for all in the European Region (1987–1988)*. Copenhagen, WHO Regional Office for Europe, 1987 (document EUR/RC37/8, Rev.1).
11. *HFA indicators and evaluation framework for the European Region of WHO (1990–1991)*. Copenhagen, WHO Regional Office for Europe, 1990 (document EUR/RC40/9).
12. *Second evaluation of the strategy for health for all by the year 2000*. Copenhagen, WHO Regional Office for Europe, 1991 (document EUR/RC41/Inf.Doc./3).
13. *Development of indicators for monitoring progress towards health for all by the year 2000*. Geneva, World Health Organization, 1981 (Health for All Series, No. 4).
14. Bonte, J.T.P. & Van Son, P. Health statistics in the Netherlands for health policy and evaluation: experience and developments. *Statistical journal of the United Nations*, **ECE 5**: 123–133 (1988).
15. Kalimo, E. *Planning and evaluation of national health insurance in Finland*. Helsinki, Social Insurance Institution, 1979 (Series M:32).
16. Purola, T. National surveys of health and social security in Finland. *In*: Holland, W.W. et al., ed. *Measurement of levels of health*. Copenhagen, WHO Regional Office for Europe, 1979 (WHO Regional Publications, European Series, No. 7), pp. 381–386.
17. US Department of Health and Human Services. *National health interview survey: report of the National Committee on Vital and Health Statistics*. Hyattsville, MD, National Center for Health Statistics, 1980 (DHHS Publication No. (PHS) 81–1160).
18. Haveman, H. *Recent developments in the health strategy and their potential impact on health monitoring systems: the Netherlands as an example*. Copenhagen, WHO Regional Office for Europe, 1993 (document ICP/HST 153/12).
19. Van Casteren, V. *Inventory of sentinel health information systems with GPs in the European Community: situation up to March 1990*. Brussels, Institute of Hygiene and Epidemiology, 1991.

20. *International statistical classification of diseases and related health problems*, 10th revision. Geneva, World Health Organization, 1992.

21. *International classification of impairments, disabilities, and handicaps: a manual of classification relating to the consequences of disease*. Geneva, World Health Organization, 1980.

22. EVERS, S. *Health for all indicators in health interview surveys: an overview of the coverage of health for all indicators in population surveys inside the European Region and some selected countries outside the Region*. Report presented at the second consultation to develop common methods and instruments for health interview surveys, 18–20 September 1990 (document ICP/HST 124/10, Rev.1, available from Statistics Netherlands, Voorburg).

23. EVERS, S.M.A.A. Health for all indicators in health interview surveys. *Health policy*, **23**: 205–218 (1993).

24. *Evaluation of the use of the international classification of impairments, disabilities and handicaps (ICIDH) in surveys and health-related statistics*. Strasbourg, Council of Europe, 1990.

25. VAN DE WILLIGE, G. & WIERSMA, D. *The measurement of mental disorders and their consequences in health interview surveys*. Groningen, Groningen State University, 1992.

26. STATISTICS NETHERLANDS & ERASMUS UNIVERSITY, ROTTERDAM. *International variation in socio-economic inequalities in self- reported health: a comparison of the Netherlands with other industrialised countries*. The Hague, SDU, 1992.

27. NOSSIKOV, A. *Measurement of health for all indicators in health interview surveys planned for 1993/1994 and some notes on prospects for survey harmonization*. Paper prepared for the third consultation to develop common methods and instruments for health interview surveys, 22–24 September 1992 (document ICP/HST/124, Rev.1).

28. GROVES, R.M. *Survey errors and survey costs*. New York, John Wiley & Sons, 1989.

29. CARTWRIGHT, A. *Health surveys in practice and in potential: a critical review of their scope and methods*. London, King Edward's Hospital Fund, 1983.

30. KARS-MARSHALL, C. ET AL. *Feeling the nation's pulse: a study of national health interview surveys*. Rotterdam, Erasmus University, 1983.

31. White, K.L. Health surveys: who, why and what? *World health statistics quarterly*, **38**: 2–14 (1985).

32. Kars-Marshall, C. et al. National health interview surveys for health care policy. *Social science & medicine*, **26**(2): 223–233 (1988).

33. Rothman, M.L. et al. The validity of proxy-generated scores as measures of patient health status. *Medical care*, **29**: 115–124 (1991).

34. Van Sonsbeek, J.L.A. Het eigen oordeel over de gezondheid; methodische effecten bij het gezondheidsoordeel in gezondheidsenquêtes [Self rated health; methodological effects with self-rated health in health interview surveys]. *Maandbericht gezondheidsstatistiek*, **10**(9): 15–23 (1991).

35. Picavet, H.S.J. et al. Het meten van functionele beperkingen bij ouderen via gezondheidsenquêtes [The measurement of functional disabilities in the elderly by surveys]. *Maandbericht gezondheidsstatistiek*, **11**(7): 5–20 (1992).

36. Tennant, A. et al. Investigating the proxy effect and the salience principle in household based postal questionnaires. *Journal of epidemiology and community health*, **45**: 312–316 (1991).

37. Sudman, S. & Bradburn, N.M. *Asking questions. A practical guide to questionnaire design*. San Francisco, Jossey-Bass, 1982.

38. Edelbrock, C. & Costello, A.J. Structured psychiatric interviews for children. *In*: Rutter, M. et al., ed. *Assessment and diagnosis in child psychopathology*. New York, Guilford Press, 1988, pp. 87–112.

39. Kormendi, E. & Noordhoek, J. *Data quality and telephone interviews. A comparative study of face-to-face and telephone data collecting methods*. Copenhagen, Danmarks Statistik, 1989.

40. Martin, J. et al. *The prevalence of disability among adults*. London, H.M. Stationery Office, 1988 (OPCS Survey of Disability in Great Britain, Report 1).

41. Gorter, K.A. Survey methods for the assessment of physical disability among children. *Disability and rehabilitation*, **15**(1): 47–51 (1993).

42. De Heer, W.F. & Israëls, A.Z. *Response trends in Europe*. Invited paper for the 152nd ASA-Conference, Boston, August 9–13, 1992 (unpublished document available from Statistics Netherlands, Voorburg).

43. De Heer, W.F & Israëls, A.Z. *Report on third workshop on household survey nonresponse. Statistics Netherlands, Voorburg, Netherlands, 14–16 September 1992* (unpublished document available from Statistics Netherlands, Voorburg).

44. Waterhouse, J. et al., ed. *Cancer incidence in five continents*. Vol. III. Lyon, International Agency for Research on Cancer, 1976 (IARC Scientific Publications, No. 15), p. 456.

45. Bethlehem, J.G. & Keller, W.J. The Blaise System for integrated survey processing. *Survey methodology (Statistics Canada)*, **17**(1): 43–56 (1991).

46. Statistics Netherlands & Ministry of Welfare, Health and Cultural Affairs. *Vademecum of health statistics of the Netherlands 1992*. The Hague, SDU, 1992.

47. Kaplan, G. et al. Subjective state of health and survival in elderly subjects. *Journal of gerontology*, **43**(4): 114–120 (1988).

48. Van Sonsbeek, J.L.A. Methodische en inhoudelijke aspecten van de OESO-indicator betreffende langdurige beperkingen in het lichamelijk functioneren [Methodological aspects and content of the OECD-longterm disability indicator]. *Maandbericht gezondheidsstatistiek*, **7**(6): 4–17 (1988).

49. McWhinnie, J.R. *Measuring disability*. Paris, Organisation for Economic Co-operation and Development, 1982 (OECD Social Indicator Development Programme, Special Studies, No. 5).

50. Fillenbaum, G.G. *The well-being of the elderly: approaches to multidimensional assessment*. Geneva, World Health Organization, 1984 (WHO Offset Publication, No. 84).

51. McDowell, I. & Newell, C. *Measuring health: a guide to rating scales and questionnaires*. New York, Oxford University Press, 1987.

52. Sanders, B.S. Measuring community health levels. *American journal of public health*, **54**: 1063–1070 (1964).

53. Robine, J.M. et al., ed. *Health expectancy: first workshop of the international Healthy Life Expectancy Network (REVES)*. London, H.M. Stationery Office, 1992 (Studies on Medical and Population Subjects, No. 54).

54. Sullivan, D.F. A single index of mortality and morbidity. *HSMHA health reports*, **86**: 347–354 (1971).

55. MATHERS, C. & ROBINE, J.M. Health expectancy indicators: a review of the work of REVES to date. *In*: Robine J.M. et al., ed. *Calculation of health expectancies: harmonization, consensus achieved and future perspectives*. Paris, Colloques INSERM/John Libbey Eurotext, 1993, pp. 1–21.

56. BROUARD, N. & ROBINE, J.M. A method for calculation of health expectancy applied to longitudinal surveys of the elderly in France. *In*: Robine, J.M. et al., ed. *Health expectancy: first workshop of the international Healthy Life Expectancy Network (REVES)*. London, H.M. Stationery Office, 1992 (Studies on Medical and Population Subjects, No. 54), pp. 87–94.

57. ROBINE, J.M. & MATHERS, C. Measuring compression or expansion of morbidity trough changes in health expectancy. *In*: Robine J.M. et al., ed. *Calculation of health expectancies: harmonization, consensus achieved and future perspectives*. Paris, Colloques INSERM/John Libbey Eurotext, 1993, pp. 269–285.

58. ROBINE, J.M. Estimating disability-free life expectancy (DFLE) in the western countries in the last decade: how can this new indicator of health status be used? *World health statistics quarterly*, **42**(3): 141–150 (1989).

59. VAN GINNEKEN, J.K.S. ET AL. Summary of results of calculations of life expectancy free of disability in the Netherlands in 1981–85. *In*: Robine, J.M. et al., ed. *Health expectancy: first workshop of the international Healthy Life Expectancy Network (REVES)*. London, H.M. Stationery Office, 1992 (Studies on Medical and Population Subjects, No. 54), pp. 35–40.

60. COLVEZ, A. Extension de la notion d'espérance de vie (Annexe). *In*: Rumeau-Rouquette, C. et al. *Méthodes en épidémiologie*, 3rd ed. Paris, Flammarion Médecine Science, 1984, pp. 103–108.

61. CRIMMINS, E.M. ET AL. Sullivan and multistate methods of estimating active life expectancy: two methods, two answers. *In*: Robine J.M. et al., ed. *Calculation of health expectancies: harmonization, consensus achieved and future perspectives*. Paris, Colloques INSERM/John Libbey Eurotext, 1993, pp. 155–160.

62. FURER, J.W. & TAX, B., ED. *Somatische klachten, psychiatrische symptomen en psychosociale problemen: eindrapport van het regioproject Nijmegen, deel I* [Somatic complaints, psychiatric symptoms, and psychosocial problems: final report on the Nijmegen Regional Project, part I]. Nijmegen, Institute of Social Medicine of the Nijmegen Catholic University, 1987.



BEST COPY AVAILABLE

63. HODIAMONT, P.P.G. *Het zoeken van zieke zielen* [Seeking sick souls]. Thesis, Nijmegen Catholic University, 1986.
64. *Diagnostic and statistical manual of mental disorders*, 3rd ed., revised (DSM–III–R). Washington, DC, American Psychiatric Association, 1987.
65. THOMPSON, C., ED. *The instruments of psychiatric research*. Chichester, John Wiley & Sons, 1989.
66. WETZLER, S. *Measuring mental illness: psychometric assessment for clinicians*. Washington, DC, American Psychiatric Press, 1989.
67. ESLINGER, P.J. ET AL. Neuropsychologic detection of abnormal mental decline in older persons. *Journal of the American Medical Association*, **253**(5): 670–674 (1985).
68. FOLSTEIN, M.F. ET AL. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *Journal of psychiatric research*, **12**: 189–198 (1975).
69. GOLDBERG, D. & WILLIAMS, P. *A user's guide to the General Health Questionnaire*. Windsor, NFER-Nelson Publishing Company, 1988.
70. ROBINS, L.N. ET AL. National Institute of Mental Health Diagnostic Interview Schedule. *Archives of general psychiatry*, **38**: 381–389 (1981).
71. WHO DIVISION OF MENTAL HEALTH. *Composite International Diagnostic Interview (CIDI) core version 1.1*. Washington, DC, American Psychiatric Press, 1993.
72. WHO DIVISION OF MENTAL HEALTH. *Schedules for clinical assessment in neuropsychiatry (SCAN Version 2)*. Washington, DC, American Psychiatric Press, 1993.
73. CHOLLAT-TRAQUET, C. *Women and tobacco*. Geneva, World Health Organization, 1992.
74. *The health benefits of smoking cessation: a report of the Surgeon General*. Rockville, MD, US Department of Health and Human Services, 1990.
75. *Tobacco smoking*. Lyon, International Agency for Research on Cancer, 1986 (IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Vol. 38).
76. *Respiratory health effects of passive smoking: lung cancer and other disorders*. Washington, DC, US Environmental Protection Agency, 1992.
77. PETO, R. ET AL. Mortality from tobacco in developed countries: indirect estimation from national vital statistics. *Lancet*, **339**: 1268–1278 (1992).

78. VILAIN, C. *The evaluation and monitoring of public action on tobacco*. Copenhagen, WHO Regional Office for Europe, 1988 (Smoke-free Europe Series, No. 3).

79. BERG, M.A. ET AL. *Health behaviour among Finnish adult population, spring 1992*. Helsinki, National Public Health Institute, 1993 (National Public Health Institute Series, No. B-5).

80. KING, A.J.C. & COLES, B. *The health of Canada's youth: views and behaviours of 11-, 13- and 15-year-olds from 11 countries*. Ottawa, Health and Welfare Canada, 1992.

81. *Health behaviour in school-aged children: a WHO cross-national survey (HBSC). Resource package of questions 1993–94*. Bergen, University of Bergen, 1993.

82. NORGAN, N.G., ED. *Physical activity and health*. Cambridge, Cambridge University Press, 1993.

83. BERLIN, J.A. & COLDITZ, G.A. A meta-analysis of physical activity in the prevention of coronary heart disease. *American journal of epidemiology*, **132**: 612–628 (1990).

84. KOPLAN, J.P. ET AL. Physical activity, physical fitness, and health: time to act. *Journal of the American Medical Association*, **262**: 2437 (1989).

85. BLAIR, S.N. ET AL. Physical fitness and all-cause mortality: a prospective study of healthy men and women. *Journal of the American Medical Association*, **262**: 2395–2401 (1989).

86. WASHBURN, R.A. ET AL. Physical activity assessment for epidemiologic research: the utility of two simplified approaches. *Preventive medicine*, **16**: 636–646 (1987).

87. *Fitness and life-style in Canada: a report by Canada Fitness Survey*. Ottawa, Canadian Fitness and Lifestyle Research Institute, 1983.

88. BRZEZINSKY, Z.J. & DES FONTAINES, V.H. Personal protection. *In*: Abelin, T. et al., ed. *Measurement in health promotion and protection*. Copenhagen, WHO Regional Office for Europe, 1987 (WHO Regional Publications, European Series, No. 22), pp. 233–266.

89. CAMERON, M. & HOFVANDER, Y. *Manual on feeding infants and young children*, 3rd ed. Oxford, Oxford University Press, 1983, pp. 2–4.

90. BROOKE, O.G. ET AL. Effects on birth weight of smoking, alcohol, caffeine, socioeconomic factors, and psychosocial stress. *British medical journal*, **298**: 795–801 (1989).

91. FALKNER, F. Measures of human growth. *In*: Abelin, T. et al., ed. *Measurement in health promotion and protection*. Copenhagen, WHO Regional Office for Europe, 1987 (WHO Regional Publications, European Series, No. 22), pp. 109–122.

92. OVERPECK, M.D. ET AL. A comparison of the childhood health status of normal birth weight and low birth weight infants. *Public health reports*, **104**(1): 58–70 (1989).

93. BARKER, D.J.P. ET AL. Fetal nutrition and cardiovascular disease in adult life. *Lancet*, **341**: 938–941 (1993).

94. TAS, R.F.J. Voortgaande sterke toename meerlingen in Nederland [Continuing strong increase multiples in the Netherlands]. *Maandstatistiek van de bevolking*, **40**(12): 12–13 (1992).

95. SWINKELS, H. Geboortelengte en -gewicht, GE 1985 [Birth length and birth weight, HIS 1985]. *Maandbericht gezondheidsstatistiek*, **8**(1): 4–12 (1989).

96. EVENSEN, S. *Relationship between infant morbidity and breast-feeding versus artificial feeding in industrialized countries: a review of the literature*. Copenhagen, WHO Regional Office for Europe, 1982 (document ICP/NUT 010/6, Rev.1).

97. CUNNINGHAM, A.S. ET AL. Breast-feeding and health in the 1980s: a global epidemiologic review. *Journal of pediatrics*, **118**: 659–666 (1991).

98. HOWIE, P.W. ET AL. Protective effect of breast feeding against infection. *British medical journal*, **300**: 11–16 (1990).

99. LUCAS, A. ET AL. Breast milk and subsequent intelligence quotient in children born preterm. *Lancet*, **339**: 261–264 (1992).

100. *PCB's, PCDD's and PCDF's in breast milk: assessment of health risks*. Copenhagen, WHO Regional Office for Europe, 1988 (Environmental Health Series, No. 29).

101. GEURTS, J.J.M. Borstvoeding in Nederland [Breast feeding in the Netherlands]. *Maandbericht gezondheidsstatistiek*, **12**(9): 4–24 (1993).

102. SEIDELL, J.C., ED. *Obesity in Europe: prevalence and public health implications*. Copenhagen, WHO Regional Office for Europe (in press).

103. BERGER, M. ET AL. Health hazards of overweight. *In*: Van den Berg, E.M.E., ed. *Proceedings of the fourth European nutrition conference*. The Hague, Voorlichtingsbureau voor de Voeding, 1985, pp. 31–37.

104. KRAL, J.G. Morbid obesity and related health risks. *Annals of internal medicine*, **103**: 1043–1047 (1985).

105. SIMOPOULOS, A.P. & VAN ITALLIE, T.B. Body weight, health and longevity. *Annals of internal medicine*, **100**: 286–295 (1984).

106. WAALER, H.T. Height, weight and mortality: the Norwegian experience. *Acta medica scandinavica*, **679**(Suppl.): 1–56 (1984).

107. BURTON, B.T. ET AL. Health implications of obesity: an NIH consensus development conference. *International journal of obesity*, **9**: 155–159 (1985).

108. ROYAL COLLEGE OF PHYSICIANS. Obesity. *Journal of the Royal College of Physicians*, **17**: 1–65 (1983).

109. GARROW, J.S. *Treat obesity seriously: a clinical manual*. Edinburgh, Churchill Livingstone, 1981.

110. *Measuring obesity: classification and description of anthropometric data*: report on a WHO Consultation on the Epidemiology of Obesity, Warsaw, 21–23 October 1987. Copenhagen, WHO Regional Office for Europe, 1988 (document EUR/ICP/NUT 125).

111. STEWART, A.L. & BROOK, R.H. Effects of being overweight. *American journal of public health*, **73**: 171–178 (1983).

112. PALTA, M. ET AL. Comparison of self-reported and measured height and weight. *American journal of epidemiology*, **115**: 223–230 (1982).

113. VAN SONSBEEK, J.L.A. & APPELBOOM, W.J.M.J. Lengte en gewichtwaarnemingen in de continue gezondheidsenquête 1981 [Heights and weights as observed in the 1981 Health Interview Survey]. *Maandbericht gezondheidsstatistiek*, **2**(12): 25–33 (1983).

114. VERWEIJ, G.C.G. Ontwikkelingen in onder- en overgewicht, 1981–1988 [Developments in underweight and overweight, 1981–1988]. *Maandbericht gezondheidsstatistiek*, **8**(11): 5–10 (1989).

115. LINDQUIST, O. Intraindividual changes of blood pressure, serum lipids, and body weight in relation to menstrual status; results from a prospective population study of women in Göteborg, Sweden. *Preventive medicine*, **11**: 162–172 (1982).

116. ANDRES, R. ET AL. Impact of age on weight goals. *Annals of internal medicine*, **103**: 1030–1033 (1985).

117. NIETO-GARCIA, F.J. ET AL. Body mass definitions of obesity: sensitivity and specificity using self-reported weight and height. *Epidemiology*, **1**: 146–152 (1990).

118. ROLLAND-CACHERA, M.F. ET AL. Adiposity indices in children. *American journal of clinical nutrition*, **36**: 178–184 (1982).

119. MUST, A. ET AL. Reference data for obesity: 85th and 95th percentiles of body mass index (wt/ht2) and triceps skinfold thickness. *American journal of clinical nutrition*, **53**: 839–846 (1991).

120. MUST, A. ET AL. Reference data for obesity: 85th and 95th percentiles of body mass index (wt/ht2) – a correction. American *Journal of clinical nutrition*, **54**: 773 (1991).

121. WHITEHEAD, M. *The concepts and principles of equity and health*. Copenhagen, WHO Regional Office for Europe, 1990 (document EUR/ICP/RPD 414).

122. *International standard classification of education*. Paris, UNESCO, 1976.

123. *International standard classification of occupation*, revised version. Geneva, International Labour Office, 1988.

124. PRESTON, S.H. ET AL. Effects of industrialization and urbanization on mortality in developed countries. *In*: *Proceedings of the International Population Conference at Manila, 1981*. Liège, IUSSP, 1981, pp. 233–253.

125. VAN DE WATER, H.P.A. *Pilot study observation of diseases in questionnaires; aims of the project*. Paper presented at the third consultation to develop common methods and instruments for health interview surveys, 22–24 September 1992 (document ICP/HST 124/12 available from Statistics Netherlands, Voorburg).

126. COMMISSION ON CHRONIC ILLNESS. *Chronic illness in the United States. Volume I: prevention of chronic illness*. Cambridge, MA, Harvard University Press, 1957.

127. GIEL, R. ET AL. Epidemiological observations on schizophrenia and disability in the Netherlands. *In*: *Classification, course and disabilities with non-affective, functional psychoses*. Groningen, Department of Social Psychiatry, Groningen State University, 1984.

128. STURT, E. & WYKES, T. Assessment schedules for chronic psychiatric patients. *Psychological medicine*, **17**: 485–493 (1987).

129. WEISSMAN, M. ET AL. The assessment of social adjustment: an update. *Archives of general psychiatry*, **38**: 1250–1258 (1981).

130. WIERSMA, D. ET AL. *GSB-II de Groningse Sociale Beperkingen Schaal, tweede versie: handleiding, vragenlijsten en scoreformulier* [The Groningen Social Disabilities Scale, second version: manual, questionnaires and scoring frames]. Groningen, Department of Social Psychiatry, Groningen State University, 1990.

131. WIERSMA, D. ET AL. The Groningen Social Disabilities Schedule: development, relationship with ICIDH, and psychometric properties. *International journal of rehabilitation research*, **11**: 213–224 (1988).

132. WHO Technical Report Series, No. 797, 1990 (*Diet, nutrition, and the prevention of chronic diseases*: report of a WHO study group).

133. JAMES, W.P.T. *Healthy nutrition: preventing nutrition-related diseases in Europe*. Copenhagen, WHO Regional Office for Europe, 1988 (WHO Regional Publications, European Series, No. 24).

134. TRUSWELL, A.S., ED. *Recommended nutrient intakes – Australian papers*. Sydney, Australian Professional Publications, 1990.

135. BECKER, W. & HELSING, E., ED. *Food and health data: their use in nutrition policy-making*. Copenhagen, WHO Regional Office for Europe, 1991 (WHO Regional Publications, European Series, No. 34).

136. CAMERON, M.E. & VAN STAVEREN W.A., ED. *Manual on methodology for food consumption studies*. Oxford, Oxford University Press, 1988.

137. LIU, K. Statistical issues related to the design of dietary survey methodology for NHANES III. *In*: Briefel, R.B. & Sempos, C.T., ed. *Dietary methodology workshop for the third National Health and Nutrition Examination Survey*. Hyattsville, MD, National Center for Health Statistics, 1992, pp. 3–14 (Vital and Health Statistics, Series 4, No. 27; DHHS Publication No. (PHS) 92–1464).

138. BELLOC, N.B. & BRESLOW, L. Relationship of physical health status and health practices. *Preventive medicine*, **1**: 409–421 (1972).

139. WILEY, J.A. & CAMACHO, T.C. Life-style and future health: evidence from the Alameda County Study. *Preventive medicine*, **9**: 1–21 (1980).

140. WINGARD, D.L. ET AL. A multivariate analysis of health-related practices: a nine-year mortality follow-up of the Alameda County Study. *American journal of epidemiology*, **116**: 765–775 (1982).

141. BINGHAM S.A. The dietary assessment of individuals; methods, accuracy, new techniques and recommendations. *Nutrition abstracts and reviews (Series A)*, **57**(10): 705–742 (1987).

142. De Bruin, A. Methodologische aspecten van de voedselconsumptiemeting in de Gezondheidsenquête 1989 [Methodological aspects of the food consumption measurement in the 1989 Health Interview Survey]. *Maandbericht gezondheidsstatistiek*, **10**(3): 5–17 (1991).

143. Aben, D.J.M. et al. *De ENVET-lijst: ontwikkeling en validering van een korte voedselfrequentievragenlijst naar energie en vet – eerste fase* [The ENVET questionnaire: development and validation of a short food frequency questionnaire on energy and fat – phase one]. Valkenswaard, Gemeenschappelijke Gezondheidsdienst regio Geldrop-Valkenswaard, 1993.

144. Anderson, P. et al. The risk of alcohol. *Addiction*, **88**: 1493–1508 (1993).

145. Moderate drinking and health. A joint "best advice" statement based on the International Symposium on Moderate Drinking and Health, April 30–May 1, 1993, Toronto, Canada. *Canadian Medical Association journal*, **151**: 13–16 (1994).

146. Beaglehole, R. & Jackson, R. Alcohol, cardiovascular diseases and all causes of death: a review of the epidemiological evidence. *Drug and alcohol review*, **11**: 275–290 (1992).

147. Pernanen, K. Validity of survey data on alcohol use. *In*: Gibbons, R.J. et al., ed. *Research advances in alcohol and drug problems*, Vol. I. New York, John Wiley & Sons, 1974, pp. 355–374.

148. Knibbe, R.A. & Swinkels, H. Alcoholgebruik in Nederland: een analyse van gegevens uit de CBS Gezondheidsenquête 1989 [Alcohol use in the Netherlands: analysis of data of the 1989 Health Interview Survey of Statistics Netherlands). *Tijdschrift voor alcohol, drugs en andere psychotrope stoffen*, **18**(3): 124–138 (1992).

149. Lemmens, P.H.H.M. et al. Weekly recall and diary estimates of alcohol consumption in a general population survey. *Journal of studies on alcohol*, **49**: 131–135 (1988).

150. Garretsen, H.F.L. *Probleemdrinken: prevalentiebepaling, beïnvloedende factoren en preventiemogelijkheden* [Problem drinking: prevalence determination, influential factors and prevention possibilities]. Lisse, Swets & Zeitlinger, 1983.

151. Crawford, A. A comparison of participants and nonparticipants from a British general population survey of alcohol drinking practices. *Journal of the Marketing Research Society*, **28**: 291–297 (1986).

152. LEMMENS, P.H.H.M. ET AL. Bias due to non-response in a Dutch survey on alcohol consumption. *British journal of addiction*, **83**: 1069–1077 (1988).

153. *HFA monitoring for the European Region of WHO (1993–1994)*. Copenhagen, WHO Regional Office for Europe, 1993 (document EUR/RC43/12).

154. *Health in Europe. The 1993/1994 health for all monitoring report*. Copenhagen, WHO Regional Office for Europe, 1994 (WHO Regional Publications, European Series, No. 56).

*Annex 1*

# List of participants in the Consultations to Develop Common Methods and Instruments for Health Interview Surveys[1]

| *Consultation* | *Participant* |
|---|---|
| 1st, 2nd | Dr J. Bejnarowicz<br>Department of Social Medical Research Methodology and Epidemiology, National Institute of Cardiology, Warsaw, Poland |
| 1st, 2nd, 3rd | Mr J. van den Berg<br>Department for Health Statistics, Statistics Netherlands, Heerlen, Netherlands |
| 1st | Ms A. Blanco Moreno<br>Subdirección General de Información, Ministerio de Sanidad y Consumo, Madrid, Spain |
| 1st, 2nd | Mr J.T.P. Bonte<br>Department for Health Statistics, Statistics Netherlands, Voorburg, Netherlands |
| 1st | Mr E.J.G. van den Brekel<br>Department for Health Statistics, Statistics Netherlands, Heerlen, Netherlands |

[1] Organized by Statistics Netherlands and the WHO Regional Office for Europe, and held in June 1988, September 1990 and September 1992.

| | |
|---|---|
| 3rd | Ms A. de Bruin<br>Department for Health Statistics, Statistics Netherlands, Voorburg, Netherlands |
| 3rd | Dr V. Buratta<br>Indagine Multiscopo sulle Famiglie, Istituto Nazionale di Statistica, Rome, Italy |
| 2nd | Dr R.J. Butcher<br>Social Surveys Division, Office of Population Censuses and Surveys, London, United Kingdom |
| 3rd | Mr G. Catlin<br>Canadian Centre for Health Information, Statistics Canada, Ottawa, Canada |
| 1st, 2nd | Dr A. Colvez<br>Institut national de la Santé et de la Recherche médicale, Montpellier, France |
| 2nd, 3rd | Dr D. Duckworth<br>Honorary Research Associate, Centre for Health Services Studies, University of Canterbury, Canterbury, Kent, United Kingdom |
| 1st | Ms K. Dunnell<br>Social Surveys Division, Office of Population Censuses and Surveys, London, United Kingdom |
| 2nd | Ms S. Evers<br>Department for Health Statistics, Statistics Netherlands, Heerlen, Netherlands |
| 2nd | Mr A. Gonzalez Burdiel<br>Subdirección de Estadísticas Sociales, Instituto Nacional de Estadística, Madrid, Spain |
| 1st | Mr Gonzales<br>Subdirección General de Información, Ministerio de Sanidad y Consumo, Madrid, Spain |

| | |
|---|---|
| 3rd | Ms L. Grötvedt<br>Division for Health, National Insurance and Social Conditions, Central Bureau of Statistics, Oslo, Norway |
| 3rd | Dr S. Gupta<br>Central Health Monitoring Unit, Department of Health, London, United Kingdom |
| 2nd | Mr J.L. Gutierrez<br>Subdirección General de Información Sanitaria y Epidemiologia, Ministerio de Sanidad y Consumo, Madrid, Spain |
| 2nd | Dr M. Heliövaara<br>Social Insurance Institution, Research Institute for Social Security, Helsinki, Finland |
| 3rd | Mr G. Hendershot<br>National Center for Health Statistics, US Department of Health Statistics, Hyattsville, MD, United States of America |
| 1st, 2nd | Dr H. Hermanova<br>Elderly, Disability and Rehabilitation unit, World Health Organization, Regional Office for Europe, Copenhagen, Denmark |
| 2nd | Dr Y. Izumi<br>Social Statistics Division, Statistics and Information Department, Ministry of Health and Welfare, Tokyo, Japan |
| 2nd | Dr J.W.P.F. Kardaun<br>Department for Health Statistics, Statistics Netherlands, Voorburg, Netherlands |
| 1st, 2nd, 3rd | Dr M.W. De Kleijn-de Vrankrijker<br>Ministry of Welfare, Health and Cultural Affairs, Rijswijk, Netherlands |

| | |
|---|---|
| 1st | Mr J. Korom<br>Hungarian Central Statistical Office, Budapest, Hungary |
| 1st, 2nd | Dr M. Kromberg<br>Directorate of Health, Oslo, Norway |
| 2nd | Mr J. Marinho Falcao<br>Division of Epidemiology, Direccão Geral Cuidados Saúde Primarios, Lisbon, Portugal |
| 1st | Dr H. Matsuzawa<br>Health Statistics Division, Statistics and Information Department, Ministry of Health and Human Services, Tokyo, Japan |
| 3rd | Dr H. Meltzer<br>Social Surveys Division, Office of Population Censuses and Surveys, London, United Kingdom |
| 1st | Professor P. Minaire<br>Service Réeducation et Réadaptation fonctionnelle, Centre hospitalier régional & universitaire de St Etienne, St Etienne, France |
| 1st | Dr K. Nakamura<br>Health Statistics Division, Statistics and Information Department, Ministry of Health and Welfare, Tokyo, Japan |
| 2nd, 3rd | Dr A. Nossikov<br>Unit of Epidemiology, Statistics and Research, World Health Organization, Regional Office for Europe, Copenhagen, Denmark |
| 3rd | Mr G. Papp<br>Division of Population and Health Statistics, Hungarian Central Statistical Office, Budapest, Hungary |
| 2nd, 3rd | Mr N.K. Rasmussen<br>Danish Institute for Clinical Epidemiology, Copenhagen, Denmark |

| | |
|---|---|
| 2nd | Mr E. Regidor<br>Subdirección General de Información Sanitaria y Epidemiologia, Ministerio de Sanidad y Consumo, Madrid, Spain |
| 3rd | Mr J.M. Robine<br>Institut national de la Santé et de la Recherche médicale, Montpellier, France |
| 3rd | Dr Z. Sobotik<br>Institute of Health Information and Statistics, Prague, Czech Republic |
| 1st, 2nd | Mr J.L.A. van Sonsbeek<br>Department for Health Statistics, Statistics Netherlands, Voorburg, Netherlands |
| 1st, 2nd, 3rd | Dr T. Spuhler<br>Federal Statistical Office, Berne, Switzerland |
| 3rd | Mr H.W.A.M. Swinkels<br>Department for Health Statistics, Statistics Netherlands, Heerlen, Netherlands |
| 1st | Mr Teyeiro<br>Servicio de Estadisticas Sanitarias, Instituto Nacional de Estadística, Madrid, Spain |
| 1st | Dr M.C. Thuriaux<br>Division of Epidemiological Surveillance and Health Situation and Trend Assessment, World Health Organization, Geneva, Switzerland |
| 3rd | Dr H.P.A. van de Water<br>Netherlands Institute for Preventive Health Care, Leiden, Netherlands |
| 3rd | Mr T. Wood<br>Health Section, Australian Bureau of Statistics, Belconnen, Australia |

| | |
|---|---|
| 3rd | Dr D. Wiersma<br>Department of Social Psychiatry, University of Groningen, Netherlands |
| 3rd | Mr G. van de Willige<br>Department of Social Psychiatry, University of Groningen, Netherlands |
| 2nd | Dr D. Winn<br>National Center for Health Statistics, US Department of Health Statistics, Hyattsville, MD, United States of America |

Annex 2

# List of working papers prepared for the Consultations to Develop Common Methods and Instruments for Health Interview Surveys that have been used in preparing this publication[1]

**1st Consultation**

*Health for all indicators and household surveys (with particular reference to the European Region of WHO)*, M.C. Thuriaux

*Minimum set of indicators for monitoring progress towards health: the area of disability in health interview surveys*, A. Colvez

*Common instruments for health interview surveys (indicators not related to disablement)*, J. van den Berg

*Methodological issues in health interview surveys*, K. Dunnell

*Overview of health interview surveys: the experience of the United States, Great Britain, Netherlands, Italy and Switzerland*, T. Spuhler & F. Paccaud

**2nd Consultation**

*Measuring socioeconomic status in health interview surveys*, B. Butcher

[1] Copies of these papers are available from Statistics Netherlands, P.O. Box 595, 2270 AZ Voorburg, Netherlands, or from the Epidemiology, Statistics and Health Information Unit, WHO Regional Office for Europe, Scherfigsvej 8, DK-2100 Copenhagen Ø, Denmark.

*Healthy life expectancy, progress in theoretical and practical aspects*, A. Colvez

*The measurement of chronic conditions in health interview surveys*, D. Duckworth

*Assessment of physical activity in health interview surveys*, T. Spuhler

*Health for all indicators in health interview surveys: an overview of the coverage of health for all indicators in population surveys inside the European Region and some selected countries outside the Region*, S. Evers

**3rd Consultation**

*Multiplication of health expectancy calculations and international comparison problems*, J.M. Robine, I. Romieu & C. Mathers

*Measurement of food consumption in health interview surveys*, A. de Bruin

*Assessment of physical activity in health interview surveys*, T. Spuhler

*Surveying alcohol consumption: a proposal on some questions*, H. Swinkels

*The measurement of mental disorders and their consequences in health interview surveys*, G. van de Willige & D. Wiersma

*Measurement of health for all indicators in health interview surveys planned for 1993/1994 and some notes on prospects for survey harmonization*, A. Nossikov

*Annex 3*

# Recommended instruments for chronic mental conditions

The recommended instruments for the assessment of selected major chronic mental conditions, as described in the section on chronic conditions (mental) on page 65 of the main text, are presented here. For most of the instruments translations in different languages exist.

> *Note: For many of these instruments a reserved copyright applies, which can differ with the language. There may also be other restrictions that prohibit official use. Potential users should therefore contact authors/publishers and local experts before using any of these instruments in official surveys.*

## 1. Dementia

For subjects of 55 years and above the *Iowa dementia test (1)* is recommended, which consists of *(a)* the measurement of temporal orientation *(2)*, *(b)* the controlled oral word association test *(3)*, and *(c)* the Benton visual retention test (MC version) *(4)*.

"We would like to know the opinion of older people on a number of questions and investigate their performance of a few simple tasks. From time to time, everyone has trouble remembering the name of a familiar person, or learning something new, or they experience moments of confusion. Apart from that, do you usually have problems with your ability to remember or learn?" (Yes/No) "I should like to ask you some questions on this subject."

*(a) Measurement of temporal orientation*

1. Can you tell me today's date? (The subject is required to give day, month and year)

2. Can you tell me what day of the week it is?

3. Please do not look at your watch. Can you tell me what time it is now? (Interviewer makes sure that subject cannot look at watch or clock)

*Scoring*

- *Day of week*: 1 point for each day removed from the correct day, up to a maximum of 3 points.

- *Day of month*: 1 point for each day removed from the correct day, up to a maximum of 15 points.

- *Month*: 5 points for each month removed from the correct month, up to a maximum of 30 points (with the qualification that if the stated date is within 15 days of the correct date, no points are added for the incorrect month, e.g. 29 May for 2 June is scored as 4 points).

- *Year*: 10 points for each year removed from the correct year, up to a maximum of 60 points (with the qualification that if the stated date is within 15 days of the correct date, no points are added for the incorrect year, e.g. 26 December 1992 for 2 January 1993 is scored as 7 points).

- *Time of day*: 1 point for each 30 minutes removed from the correct time, up to a maximum of 5 points.

  *Score 0:* perfect temporal orientation

  *Score 1–3:* normal orientation

  *Score $\geq$ 4:* inferior orientation

*(b) Controlled oral word association test*

The test is explained as follows.

"I want to see how many words you can say beginning with a certain letter in one minute. Don't say proper names or numbers or the same word with a different ending. The letter is F, you can begin."

If subjects have difficulty in understanding the task, it can be explained with examples, using a non-designated letter. After the first (letter F) trial has been completed, the letter A and S trials are administered. The interviewer keeps a record of the subject's verbal responses.

*Scoring*

The total number of correct words during the three one-minute trials is recorded, constituting a raw score, which is adjusted for educational level, sex and age by means of Table 1. Normative data for subjects over 64 years of age are provided by Benton et al. *(5)*.

A corrected score of 22 or less is classified as defective (this performance level is exceeded by 97% of normal subjects).

When this test is administered in a language other than English, the adjustment formula and cut-off point should be used cautiously. Ideally, comparable normative data should be developed for other (non-English) languages.

Table 1. Adjustment formula for education, sex and age

| Years of schooling | Males | | Females | |
|---|---|---|---|---|
| | 55–59 years | 60–64 years | 55–59 years | 60–64 years |
| 9 or less | + 15 | + 17 | + 10 | + 12 |
| 9–11 | + 7 | + 9 | + 7 | + 9 |
| 12–15 | + 5 | + 7 | + 5 | + 7 |
| 16 + | + 1 | + 3 | + 1 | + 3 |

*Source: Lezak (6).*

*(c) Benton visual retention test (MC version)*[1]

The Benton visual retention test is a measure of visual perception and short-term visual memory for designs. Recommended are the parallel tests of the multiple choice form (forms F and G; each consisting of 15 designs. From the various possibilities of administration, instruction M (10 seconds of exposure followed by immediate choice) is recommended. The designs of the drawing form are used as stimuli. The subject is told that he or she will be shown a card with one or more figures, and that he or she will be allowed to study it for 10 seconds. After the card has been removed, the subject is shown a card with four designs, one of which has been shown before, and asked to point out the matching design. Scores (number correct) range from 0 to 15. For all different forms norm tables exist. Abnormal scores range from lower than 6 (for children of 7 years of age) to lower than 10 (adults).

In order to use these three sub-tests for establishing the diagnosis of (highly) probable dementia there should, ideally, be a validation study in every country, culture or language area. The cut-off points given should therefore only be seen as indications. In particular, for the combined use of the raw scores on the controlled oral word association test and the visual retention test, it should be noted that the sensitivity and specificity of a certain cut-off score depends on the characteristics of the population under investigation *(7)*. Because the tests are well known in the field of neuropsychology it is advisable to contact local specialists for normative values.

*Proxy-informant questions for the screening of dementia*

1. Does the subject usually know today's date? (Yes/No)

2. Does the subject usually know what day of the week it is? (Yes/No)

3. Does the subject have problems with his or her memory? (Yes/No)

If yes: does the subject forget after a few minutes things that should have been remembered? (Yes/No)

[1] For official manual and copyright information please contact Psychological Corporation, 304 East 45th Street, New York, NY 10017, USA.

4. Is the subject capable of taking care of himself or herself completely? (Yes/No)

If any of the answers to questions 1, 2 or 4 is "No" or if the answer to question 3 is "Yes" ask the following question:

5. Has a health professional ever given a diagnosis of dementia or Alzheimer's disease? (Yes/No)

If the answer to question 5 is "Yes" a diagnosis of dementia can be established. If the answer is "No" it is only possible to give a diagnosis of probable dementia.

**2. Mental retardation**

Only for subjects with lower education (at or below primary school level) and younger than 55 years:

*(a) Screening*

The following screening questions are recommended.

1. Did you finish school? (Yes/No)

2. How are (were) your grades at school? (Good/Poor)

3. Have you had to repeat a term or year (i.e. remain in the same class) more than once at school? (Yes/No)

4. Has a school or health professional ever told you that you have (had) a learning disability? (Yes/No)

If the answer to question 1 is "No", or the answer to question 2 is "Poor", or the answer to question 3 is "Yes", or the answer to question 4 is "Yes", proceed with *(b)*:

*(b) Instruments*

For subjects of 14–55 years the *mini-mental state examination (8)* is recommended. The examination itself is shown in Box 1. Instructions for administering and scoring the test are given below.

**Box 1. Mini-mental state examination**

| | | | (Points) |
|---|---|---|---|
| | *Orientation* | | |
| 1. | What is the | Year? | (1) |
| | | Season? | (1) |
| | | Date? | (1) |
| | | Day | (1) |
| | | Month? | (1) |
| 2. | Where are we? | State? | (1) |
| | | Country? | (1) |
| | | Town or city? | (1) |
| | | Hospital?/This address? | (1) |
| | | Floor? | (1) |
| | *Registration* | | |
| 3. | Name three objects (apple, table, coin), taking one second to say each. Then ask the subject all three after you have said them. Give one point for each correct answer. Repeat the answers until the subject learns all three. | | (3) |
| | *Attention and calculation* | | |
| 4. | Serial sevens. Give one point for each correct answer. Stop after five answers. *Alternative*: spell WORLD backwards. | | (5) |
| | *Recall* | | |
| 5. | Ask for the names of the three objects learned in Question 3. Give one point for each correct answer. | | (3) |
| | *Language* | | |
| 6. | Point to a pencil and a watch. Ask the subject to name them as you point. | | (2) |
| 7. | Ask the subject to repeat "No ifs, ands or buts" | | (1) |
| 8. | Ask the subject to follow a three-stage command: "Take a paper in your right hand. Fold the paper in half. Put the paper on the floor." | | (3) |
| 9. | Ask the subject to read and obey the following: "close your eyes". (Write it in large letters). | | (1) |
| 10. | Ask the subject to write a sentence of his or her choice. | | (1) |
| 11. | Enlarge the design printed below to 3 cm per side, and have the patient copy it. | | (1) |
| | | | (Total = 30) |

*Orientation*

1. Ask for the date. Then ask specifically for parts omitted, e.g. "Can you also tell me what season it is?" One point for each correct answer.

2. Ask in turn "Can you tell me the name of this hospital?" (town, county, etc.). For non-institutionalized subjects, the question after the name of the hospital should be replaced by "What is the address?". One point for each correct answer.

*Registration*

3. Ask the subject if you may test his or her memory. Then say the names of three unrelated objects (apple, table, coin) clearly and slowly, allowing about one second for each. After you have said all three, ask the subject to repeat them. This first repetition determines the score (0–3) but keep saying them until the subject can repeat all three, up to six trials. If the subject does not eventually learn all three, recall cannot be meaningfully tested.

*Attention and calculation*

4. Ask the subject to begin with 100 and count backwards by 7. Stop after 5 subtractions (93, 86, 79, 72, 65). Score the total number of correct answers. If the subject cannot or will not perform this task, ask him or her to spell the word "world" backwards. The score is the number of letters in correct order, e.g. dlrow = 5, dlorw = 3.

*Recall*

5. Ask the subject if he or she can recall the three words you previously asked him or her to remember. Score 0–3.

*Language*

6. Naming: show the subject a wrist watch and ask him or her what it is. Repeat using a pencil. Score 0–2.

7. Repetition: ask the subject to repeat the sentence after you. Allow only one trial. Score 0 or 1.

8. Three-stage command: give the patient a piece of plain blank paper and give the command. Score 1 point for each part correctly executed.

9. Reading: on a blank piece of paper print the sentence "Close your eyes", in letters large enough for the subject to see clearly. Ask the subject to read it and do what it says. Score 1 point only if the subject actually closes his or her eyes.

10. Writing: give the subject a blank piece of paper and ask him or her to write a sentence for you. Do not dictate a sentence; it is to be written spontaneously. It must contain a subject and verb and make sense. Correct grammar and punctuation are not necessary. Ignore spelling errors when scoring.

11. Copying: on a clean piece of paper, draw two intersecting pentagons, each side about 3 cm, and ask him or her to copy it exactly as it is. All 10 angles must be present and two must intersect to score 1 point. Ignore tremor and rotation.

Each item is scored by the interviewer as correct or incorrect. Refusals to answer specific items or "don't knows" are scored as incorrect. The number of correct answers is summed, with a range of 0–30 points. Subjects with a score of 17 or less are considered to be mentally retarded.

For subjects of 7–13 years and illiterate adults the *Benton visual retention test (4)* is recommended (for details see section 1*(c)* above.

*Proxy-informant questions*

1. What do you think about the intellectual faculties of the subject? (Good/Poor)

2. Does he or she seem to understand everything? (Yes/No)

3. Can he or she read, write and calculate? (Yes/No)

If the answer to question 1 is "Poor", or the answer to question 2 or question 3 is "No", the following question should be asked.

4. Has the subject ever been diagnosed as being mentally retarded? (Yes/No)

If the answer to question 4 is "Yes", a diagnosis of mental retardation can be made.

### 3. Mental disorders

*(a) Screening*

As a screening instrument the 12-item version of the *General Health Questionnaire*[2] (GHQ-12) *(9)* is recommended (see Box 2).

Subjects with a score of three or more are considered possible cases, and the interviewer proceeds with *(b)*. If the score is two or less, the following additional questions are recommended (questions 1 and 2 are suggested by Bridges & Goldberg *(10)*; questions 3–6 are derived from Harding et al. *(11)*.

1. Do you take any tablets or medicines for your nerves? (Yes/No)

2. Do you consider that you suffer from a nervous illness? (Yes/No)

3. Do you feel that somebody has been trying to harm you in some way? (Yes/No)

4. Are you a much more important person than most people think? (Yes/No)

5. Have you noticed any interference or anything else unusual with your thinking? (Yes/No)

6. Do you hear voices without knowing where they come from or which other people cannot hear? (Yes/No).

If the answer to one of the six questions is "Yes", the remaining questions can be skipped and the interviewer proceeds with *(b)*.

[2] For official manual and copyright information please contact NFER-Nelson Publishing Company Ltd, Darville House, 2 Oxford Road East, Windsor, Berkshire, SL4 1DF, United Kingdom.

**Box 2. General Health Questionnaire – 12-item version**

Introduction:

"We would like to know if you have had any medical complaints, and how your health has been in general, over the past few weeks. Please answer ALL the questions simply by underlining which you think most nearly applies to you. Remember that we want to know about present and recent complaints, not those that you have had in the past".

| Have you recently: | *Score 0* | *Score 0** | *Score 1* | *Score 1* |
|---|---|---|---|---|
| 1. Lost much sleep over worry? | Not at all | No more than usual | Rather more than usual | Much more than usual |
| 2. Felt constantly under strain? | Not at all | No more than usual | Rather more than usual | Much more than usual |
| 3. Been able to concentrate on whatever you are doing? | Better than usual | Same as usual | Less than usual | Much less than usual |
| 4. Felt that you are playing a useful part in things? | More so than usual | Same as usual | Less useful than usual | Much less useful |
| 5. Been able to face up to your problems? | More so than usual | Same as usual | Less able than usual | Much less able |
| 6. Felt capable of making decisions about things? | More so than usual | Same as usual | Less capable than usual | Much less capable |
| 7. Felt you couldn't overcome your difficulties? | Not at all | No more than usual | Rather more than usual | Much more than usual |
| 8. Been feeling reasonably happy, all things considered? | More so than usual | About the same as usual | Less so than usual | Much less than usual |
| 9. Been able to enjoy your normal day-to-day activities? | More so than usual | About the same as usual | Less so than usual | Much less than usual |
| 10. Been feeling unhappy and depressed? | Not at all | No more than usual | Rather more than usual | Much more than usual |
| 11. Been losing confidence in yourself? | Not at all | No more than usual | Rather more than usual | Much more than usual |
| 12. Been thinking of yourself as a worthless person? | Not at all | No more than usual | Rather more than usual | Much more than usual |

When GHQ-12 is used to measure chronic complaints, the scores marked with an asterisk should be modified from 0 to 1 for questions 1, 2, 7, 10, 11 and 12. Alternatively the additional questions given above can be added to the GHQ-12 for this purpose.

For proxy informants, the GHQ is not administered. Proxy informants are asked the following questions.

1. Does the subject take any tablets or medicines for his or her nerves? (Yes/No)

2. Do you consider that the subject suffers from a nervous illness? (Yes/No)

3. Did the subject ever tell you that he or she had the idea that somebody has been trying to harm him or her in some way (without obvious reasons)? (Yes/No)

4. Did the subject ever tell you that he or she is a much more important person than most people think? (Yes/No)

5. Have you noticed anything unusual about the subject's thinking? (Yes/No)

6. Did the subject ever tell you that he or she hears voices without knowing where they come from or which other people cannot hear? (Yes/No)

If at least one of these questions is answered in the affirmative, the interviewer proceeds with *(b)*. The screen-skip procedure also applies in this case.

*(b) Instrument*

For adults and proxy informants the diagnostic interview schedule[1] (DIS) *(12)* is recommended, selected chapters on anxiety disorders, schizophrenia and affective disorders only. For children aged 6–18 years

[1] For official manual and copyright information please contact Dr Lee Robins, Washington University, School of Medicine, Department of Psychiatry, 4940 Audubon Avenue, Saint Louis, MO 63110, USA.

the selected chapters of the DIS-C (children's version) is recommended. The proxy-informant version for children is the DIS-P (parents' version).

For the use of the DIS there is a manual with extensive instructions (64 pages). Total administration time is 20–30 minutes.

***References***


1. ESLINGER, M.F. ET AL. Neuropsychologic detection of abnormal mental decline in older persons. *Journal of the American Medical Association*, **253**(5): 670–674 (1985).
2. BENTON, A.L. ET AL. *Contributions to neuropsychological assessment*. New York, Oxford University Press, 1983.
3. BENTON, A.L. & HAMSHER, K. *Multilingual aphasia examination*. Iowa City, University of Iowa Hospitals, 1978.
4. BENTON, A.L. *Revised visual retention test: clinical and experimental applications*, 4th ed. New York, Psychological Corporation, 1974.
5. BENTON, A.L. ET AL. Normative observations on neuropsychological test performances in old age. *Journal of clinical neuropsychology*, **3**: 33–42 (1981).
6. LEZAK, H.D. *Neuropsychological assessment*. New York, Oxford University Press, 1976.
7. RITCHIE, K. & FUHRER, R. A comparative study of the performance of screening tests for senile dementia using receiver operating characteristics analysis. *Journal of clinical epidemiology*, **44**(6): 627–637 (1992).
8. FOLSTEIN, M.F. ET AL. Mini-mental state: a practical method for grading the cognitive state of patients for the clinician. *Journal of psychiatric research*, **12**: 189–198 (1975).
9. GOLDBERG, D. & WILLIAMS, P. *A user's guide to the General Health Questionnaire*. Windsor, NFER-Nelson Publishing, 1988.
10. BRIDGES, K. & GOLDBERG, D. Self-administered scales of neurotic symptoms. *In:* Thompson, C., ed. *The instruments of psychiatric research*. Chichester, John Wiley & Sons, 1989, pp. 157–176.
11. HARDING, T.W. ET AL. Mental disorders in primary health care. *Psychological medicine*, **10**: 231–241 (1980).
12. ROBINS, L.N. ET AL. National Institute of Mental Health Diagnostic Interview Schedule. *Archives of general psychiatry*, **38**: 381–389 (1981).

*Annex 4*

# Examples of showcards for use in administering the instrument for socioeconomic classification

The recommended instrument for socioeconomic classification, which is described in the section on socioeconomic classification on page 87 of the main text, involves the use of showcards in relation to questions on education and income. Examples from the United Kingdom are given below.

**Education**

An example of a showcard (and coding frame) for educational qualifications is shown in Box 1.

The highest qualification should be coded. For description of codings, see the section on socioeconomic classification on page 87.

**Income**

An example of showcard for the total net income of a household is shown in Box 2.

**Box 1. Showcard for education**

| | |
|---|---|
| No qualifications | code 1 |
| CSE (Certificate of Secondary Education)<br>GCE (General Certificate of Education) O level<br>GCSE (General Certificate of Secondary Education)<br>School certificate or matriculation<br>SLC (School leaving certificate)<br>SUPE (Scottish Universities Preliminary)<br>SCE (Scottish Certificate of Education)<br>SG (Standard Grade)<br>Apprenticeship<br>City and Guilds<br>Clerical and commercial qualifications<br>(e.g. typing/shorthand/book-keeping)<br>Other qualifications | code 2 |
| GCE AS level<br>GCE A level<br>SLC/SCE/SUPE higher level<br>Certificate of sixth year studies<br>ONC (Ordinary National Certificate) | code 3 |
| Teaching qualifications<br>Nursing qualifications<br>Social work qualifications<br>HNC (Higher National Certificate)<br>University diploma<br>First degree (BSc, BA, etc.)<br>Higher degree (Msc, PhD, etc.) | code 4 |

**Box 2. Showcard for net income**

| *Per week* | *Category* | *Per month* |
|---|---|---|
| £ | | £ |
| up to 29 | 1 | up to 119 |
| 30 to 49 | 2 | 120 to 199 |
| 50 to 69 | 3 | 200 to 279 |
| 70 to 89 | 4 | 280 to 357 |
| 90 to 109 | 5 | 360 to 439 |
| 110 to 129 | 6 | 440 to 519 |
| 130 to 149 | 7 | 520 to 599 |
| 150 to 169 | 8 | 600 to 679 |
| 170 to 189 | 9 | 680 to 759 |
| 190 to 209 | 10 | 760 to 839 |
| 210 to 229 | 11 | 840 to 919 |
| 230 to 249 | 12 | 920 to 999 |
| 250 to 269 | 13 | 1000 to 1079 |
| 270 to 289 | 14 | 1080 to 1159 |
| 290 to 309 | 15 | 1160 to 1239 |
| 310 to 349 | 16 | 1240 to 1399 |
| 350 to 399 | 17 | 1400 to 1599 |
| 400 to 499 | 18 | 1600 to 1999 |
| 500 to 599 | 19 | 2000 to 2399 |
| 600 or more | 20 | 2400 or more |

*Annex 5*

# Illustrative sets of questions on alcohol consumption

As indicated in the section on alcohol consumption on page 106 of the main text, it is not yet possible to recommend a set of questions on alcohol consumption for general use in health interview surveys. The following sets of questions illustrate the types of question that might prove suitable. They are derived from questions in the national health interview surveys of Australia, Canada, the Netherlands and the United States.

A1. How long ago did you last have an alcoholic drink?

*(a)* During the last week
*(b)* One week to 1 month ago
*(c)* One month to 3 months ago (Go to A2)
*(d)* Three months to 12 months ago
*(e)* More than 12 months ago (End)

A2. During the past [week, 2 weeks, etc.] on how many days did you drink alcohol, such as [list culturally specific illustrations]?
Number of days _____

A3. On the days that you drank alcohol, how many [drinks, glasses, etc.] did you have, on average?

Number of [drinks, glasses, etc.] _____

A4. Was your drinking in the past two weeks typical of your usual drinking in the past year?

Yes_____ (End)
No _____ (Go to A5)

A5. Was your drinking in the past two weeks more or less than your usual drinking in the past year?

More_____
Less _____

If the health interview survey is conducted during a short calendar period, and if that period is a period of typical drinking patterns in the nation, the following questions are suggested.

B1. How long ago did you last have an alcoholic drink?

*(a)* During the last week
*(b)* One week to 1 month ago
*(c)* One month to 3 months ago (Go to B2)
*(d)* Three months to 12 months ago
*(e)* More than 12 months ago (End)

B2. Thinking about your drinking in the last year, did you usually drink alcohol, such as [list culturally specific illustrations] on some days of the week?

Yes_____ (Go to B3)
No _____ (End)

B3. On how many days during the week did you usually drink alcohol, on average?

Number of days _____

B4. On the days that you drank alcohol, how many [drinks, glasses, etc.] did you have, on average?

Number of [drinks, glasses, etc.] _____

These questions allow a distinction between abstainers and drinkers, using question 1; by giving different durations since the last drink, several definitions of abstainer may be operationalized. The questions also permit measures of frequency of drinking (days per period of time) and amount of drinking (drinks per day). The combination of these two measures permits a measure of quantity per unit of time, as in drinks per week. If the culturally specific "drink" (glass, bottle, etc.) is known by separate and more detailed studies to contain a reliable average amount of alcohol (or ethanol), then an internationally comparable estimate of alcohol consumption per unit time can be calculated.

These questions represent one approach to a minimum basic set of questions on alcohol consumption. More detailed questionnaires are available for more complete and accurate measurement of the amount of alcohol consumed, and for measurement of other important aspects of alcohol consumption, such as types of alcoholic beverage consumed and symptoms of alcohol dependence.

The next set of questions allows for a distinction between drinkers and abstainers, based not only on the amount of alcohol consumed but also on the *types* of alcoholic beverage used in one year. The advantage is that it is then possible to include or exclude users of certain types of alcoholic beverage (such as, for example, low-alcohol beverages) from drinkers. Asking for the kinds of beverage can act as a reminder and allows for the distinction of categories of drinkers, and the reference period is an unambiguous criterion to discriminate drinkers from abstainers.

C1. Please indicate on the following list which alcoholic beverages you drank in the last 12 months (even if only once).

_____ beer (excluding non-alcoholic beer)
_____ wine, sherry, port, vermouth
_____ liqueur, advocaat
_____ gin, brandy, cognac, whisky, vodka
_____ long drinks
_____ low-alcohol beverages
_____ I have not drunk any alcohol in the last 12 months

With respect to the *quantities of alcoholic beverages* consumed, the following questions can be asked.

C2. During the last six months, have you ever had six or more drinks containing alcohol in one day?

*(a)* Yes (Go to C3)
*(b)* No (Go to C4)

C3. During the last six months, how often have you had six or more drinks containing alcohol in one day?

*(a)* every day
*(b)* 5–6 times a week
*(c)* 3–4 times a week
*(d)* 1–2 times a week
*(e)* 1–3 times a month
*(f)* 3–5 times in six months
*(g)* 1–2 times in six months

This question allows for the detection of persons who are occasional heavy drinkers. The answer categories allow for different cut-off points by which different types of occasional heavy drinker can be classified and added to different types of drinker.

The following questions relate to frequency and quantity of alcohol consumption on weekdays and at weekends separately, and allow for a calculation of the total amount of alcohol consumed. Based on these results different cut-off points for classification of respondents into types of drinker (e.g. moderate drinkers, heavy drinkers or harmful use) can be used.

C4. Do you *usually* drink alcohol on weekdays? (i.e. Monday – Thursday)?

*(a)* Yes
*(b)* No (Go to C7)

C5. On how many of the four weekdays (i.e. Monday – Thursday) do you usually drink alcohol?

*(a)* 1 day
*(b)* 2 days
*(c)* 3 days
*(d)* 4 days

C6. How many glasses on average do you drink on such a day? (i.e. Monday – Thursday)

*(a)* 11 or more glasses, namely _____ glasses
*(b)* 7–10 glasses
*(c)* 6 glasses
*(d)* 4–5 glasses
*(e)* 3 glasses
*(f)* 2 glasses
*(g)* 1 glass

C7. Do you *usually* drink alcohol at the week-end? (i.e. Friday – Sunday?

*(a)* Yes
*(b)* No (End)

C8. On how many of the three weekend days (i.e. Friday–Sunday) do you usually drink alcohol?"

*(a)* 1 day
*(b)* 2 days
*(c)* 3 days

C9. How many glasses on average do you drink on such a day? (i.e. Friday – Sunday)

*(a)* 11 or more glasses, namely _____ glasses
*(b)* 7–10 glasses
*(c)* 6 glasses
*(d)* 4–5 glasses
*(e)* 3 glasses
*(f)* 2 glasses
*(g)* 1 glass

# HEALTH INTERVIEW SURVEYS

With the strategy for health for all and its 38 targets, the WHO Regional Office for Europe has created a common health policy for Europe, and has developed internationally agreed indicators for measuring progress towards the attainment of the targets. Some of these indicators are "classical" health indicators, such as mortality rates and the incidence of notifiable diseases, while others reflect more recent public health concerns such as health-related behaviour and quality of life. For the latter group, gathering the information necessary for monitoring and evaluating progress is somewhat haphazard. Health interview surveys provide the best – in some cases the only – means of collecting data on many of these indicators, since they mirror the information that only properly approached individuals may be able to provide and ensure that all subgroups of the population are covered. Yet such surveys have enjoyed a long tradition only in a few countries.

Moreover, when these indicators are covered, the results are often not comparable. The methods and instruments used to collect data have often been developed without international coordination or adapted from those used in other countries, usually with substantial modification to suit what are perceived to be local requirements. There has also tended to be considerable uncertainty among those countries lacking a tradition of health interviewing as to the best way of conducting surveys. Against this background, the WHO Regional Office and Statistics Netherlands organized a series of consultations, which have resulted in the internationally agreed methods and instruments for health interview surveys set out in this book. These methods and instruments are likely in the longer term to become standards, thus improving comparability of information.

This book provides practical guidance on methods for health interview surveys. It is thus essential reading for all concerned in the planning and carrying out of such surveys, whether in national statistical offices or in public or private interviewing agencies. It will also be useful to all in the public health community, including students and academics.

ISBN 92 890 1322 2

Sw.fr. 39.-

172 BEST COPY AVAILABLE